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Original Contributions.

PORCELAIN CROWN.

By W. H. Dwight, D.D.S., Le Mars, Iowa. Read Before the Northern Iowa Dental Society, at Clear Lake, Sept. 5–8, 1899.

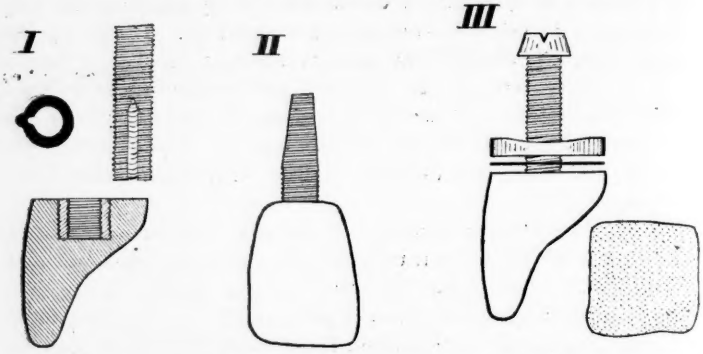
In presenting this crown and claiming so much for it, I hope to find a variety of opinions. I do not wish to say aught against any other crown, and shall not except as a comparison. I shall say the Logan is strong enough, but mine is stronger because it has a greater bearing between the porcelain and platinum. More than that, it is a better crown because it is so constructed as to allow of a more perfect adaptation to the root, is much more easily and quickly finished, and contains advantages that no other crown offers so far as I know.

I know just now the porcelain crown baked for each individual case is quite a favorite, as it no doubt should be, but taken all in all I consider this has advantages over it. In the first place, it is surely stronger being baked in one piece and going into the moulds under great pressure; and second, it can be finished while you are thinking about the other, and if the joints are not tight enough and the band not far enough out of sight when finished, just call my attention to it.

Figure 1 shows a crown without any post. The crown is baked upon the platinum tube, the post screws into the tube and is keyed to place, making it just as solid as if baked in it, but it is an advantage to have it so constructed, as I shall attempt to show. You will see by referring to these other figures that it is our intention to cap the root and screw the cap to the crown. That is true, and it contains a principle which will appeal to your better judgment. Figure 3 represents a thin slice of pure gold, Watts', the use of which will be described at the proper place. Now, that we may have a better understanding let us construct a crown in our minds, first one with a band, and then without. You all know that we

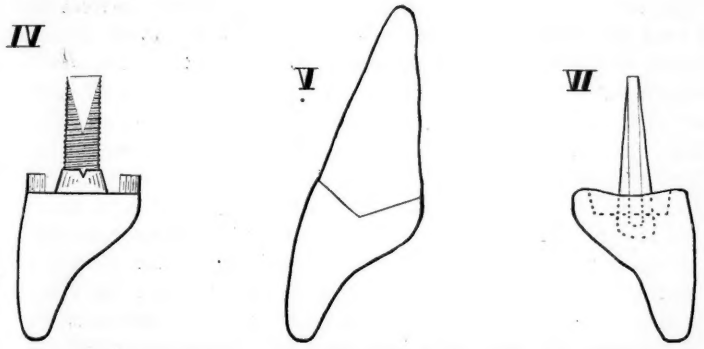
have different classes of patients; some are anxious to have the best and are willing to pay for it, others want something cheap, and again some cases require all the strength we can possibly get. Let us suppose we are to adjust an incisor, and that the incisor is in your own mouth, and see if you will not better appreciate the advantages of its construction, for I have no doubt you want something about right. We will then set one for someone else who does not care to pay much for the operation.

The first step is to select your crown, grind the root well up under the gum margins, and remove all particles of enamel, so the band may be adjusted to fit properly. Remove the post, fit the crown to the root, and right here you will see the first point of ad-



vantage—how much easier it is to make a good joint where you have no post to contend with. Cut alike the crown and platinum tube; I find it much easier to fit a cap when I cut the surface of the root flat. After getting as good a fit as you can this way, cut a small piece of pink base-plate wax to fit the cervical portion of the crown, warm slightly and drive firmly to place with the wax between the crown and root. If there are any high places on the root or crown they can be easily seen and remedied. Now adjust the post, key it to place and grind the root so it passes freely in and out and allows the crown to stand at the same angle as before. The crown is cut just a shade shorter than it would be if we were not expecting to use a cap. The next step is to fit the band. Cut it off even with the surface of the root and solder the cap just as if making a cap for a Richmond crown, punch or drill a hole to admit the

post and drive the cap to place on the root. Now drive the crown to place, letting the post pass through the hole just punched in the cap, and if your band has been properly cut you have just as good a fit between the crown and cap as you had between the crown and root, but if it should be necessary to do a little fitting it is easily accomplished, as the case is open before you. Now pass a piece of this gold (Fig. 3) over the post, cutting it to the size of the crown at the cervical portion, and drive the crown with the gold firmly against the cap. This condenses the gold and leaves a layer of soft pure gold between the cap and crown, and makes your joints very tight. Now remove the cap and crown gently from the root and screw this nut down your post and firmly against the inside of the cap (Fig. 4).



You might have considered before that you had a good joint when you drove the crown against the pure gold, and so you had, but here you have a second joint and greater power and can drive this nut harder against the gold, which makes a joint that is perfectly tight and firmly fastens the cap and crown. Can you imagine a more perfect joint? And more, it gets the gold all up under the gum, and there is nothing in this process to interfere with the fit of your band, and this is what caused me to devise this method. I used to try to band a Logan; it was the best way I knew, and I often wondered why it was, in looking over crowns which had been made by other dentists, that in cases where the Logan had been banded the gold usually showed. I at first supposed it was because the root was not cut far enough under the gum margins, and in cases

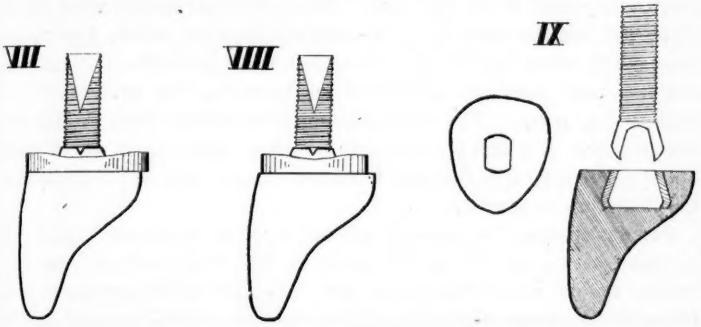
where I took special pains to put the band well out of sight those too would show in a few months, but in cases where I had made Richmond crowns the gums would hug up just as nicely as could be.

This brought me to the conclusion that it did not matter much how good a measurement you took, or how nicely you fitted a band, if you drove a crown into it and spoiled your fit you could not expect your gums to tolerate such an irritant and hug up to it. When you expect that part of the band which extends upon the root to remain stationary while you drive a crown into the part which extends beyond the root, you expect too much, as it will not do so. I think yet my conclusions were correct, but how to overcome it with the crowns at hand was what bothered me, so I made Richmond and Low crowns for awhile, but broken facings drove me from that. I used the fusible metal device and contaminated about as many bands with the metal as any one, and then had to let the gold extend down on the crown in view unless the root was cut off farther up than it should be. So I started making the cap as we have in Figs. 3 and 4, and using the Logan I would fill this space, Fig. 6, with soft gold foil, filling it quite full of course, and condensing it by driving firmly against the cap. I would then remove the cap and crown from the root, wrap the post and crown in asbestos paper, hold it in the flame and solder it at the joint between the cap and post with 18k. solder. This made a very good crown, but I would occasionally check one, and it took quite an extra amount of time, so I devised the one I have just described. I waited several years and looked over every dental journal advertisement, hoping to find what I wanted, but it came not so. I have had molds made just for the sake of having what I wanted, and I feel when I use them like a good German friend of mine who is very proud of his grown up family. He said to me in speaking of them: "Yes, they gives me lots of good feelings."

But we have not set the crown for the other fellow, so we must return to work. If we are not to use a cap we shall not have any need for the nut, Fig. 4. The root will be ground and fitted as in Fig. 5, after Ottolengui's method, and when properly fitted add a layer of gold, Fig. 3, trim it off to fit the cervical portion of the crown, fill the root with cement and drive firmly to place. This gives you a joint without any cement, as the gold presses it out as

condensed. This gives you a crown and an adaptation far superior to any way of setting a plain Logan. The fact that this crown has no space as has the Logan, Fig. 6, makes it much easier and better to adjust. It is claimed that this space is an advantage, because it allows for an additional amount of cement. Now if any dentist will look fairly and squarely at this point he will see that it does not back the claim. The space no doubt makes it easier to grind and fit, having the post baked in, but in this crown under consideration you will do your grinding when the pin is not in position, cutting alike the platinum tube and tooth, which may be cut at any angle as easily as flat, and after fitting all necessary there will still be platinum enough left for strength.

If you have something inflammable the farther you keep it



from fire the safer, and if you have something soluble the farther you keep it from its solvent the better. Wouldn't you rather have less cement and have it better protected? If plenty of cement is such an advantage, why not leave room between band and tooth when making a band or a gold crown? Do you do so? No, quite to the contrary, you make the bands fit so as to have just as little cement as possible. Let me tell you it is the cement in the root-canal and not on the surface of the root that holds the crown.

Now if you compare the Logan set plain with the one just set without a band, don't you plainly see how much better protected the cement is in the tooth that has about ⅛th of an inch of surface tightly filled with a pure mossy gold between it and the fluids of the mouth? I have, however, no desire to dwell on any crown without a band; personally I hope every one will be set with a cap, though

here it is with a wide range of adaptation. You can set it without a cap and make a crown far ahead of anything so far offered, or with a cap and have a very satisfactory operation. Imagine how much moisture can pass through between the cap and tooth, and again how much can pass between the cap and nut, also notice how much more firmly attached your crown is to the root by having your cap firmly attached to the crown.

The tooth is baked on to this tube which is threaded outside as well as inside, Fig. 1, and the post is screwed into and keyed to the tube. This gives you a fused joint between the tube and crown and offers an additional amount of attachment to what you can get in any crown, consequently additional strength. Keying the post to the tube gives every advantage of a rigid post. It may be cut off, flattened or squared to fit the case. The tube necessarily must be of platinum, but the post is of non-corrosive metal which has more strength in every way it may be tested than platinum. Platinum has not been used on account of its strength, but because of its high fusing point. The small amount of platinum used should insure a crown at a less cost, especially when platinum is worth one dollar a pennyweight, though I hesitate to say cost, as it should be the last point to consider.

Since preparing this paper a patient came in for whom I had set a Logan with a cap, filling the space in Fig. 6 with soft foil, as described before, some eight years ago. He had the misfortune to fall off a binder, when a bolt struck him on the crown and smashed it but did not injure the root. It takes no small blow to break a Logan, and I would not give much for the root if it had not been banded, but as it was it could be fixed. And that calls up still another point I have not mentioned, and did not expect to when these drawings were made. There is another good way in which a crown may be constructed, that is, as in Fig. 9. This crown and post need not be held to the construction just given, but may be made as in Fig. 9. In this you see the socket piece is larger inside than at the surface, the post has a hollow or spring end and springs into the socket as shown. When the post is cemented into the socket this space becomes filled with cement, and when hardened it prevents the arms of the post from springing together, hence becomes immovable. This could be capped, as in Figs. 3 and 4, and in case you should have occasion to repair one made in this manner you

could remove the cement inside of post, fit another crown and cement it to place without moving the cap or post, which would be no small saving of time and substance.

So far we have dealt only with strength, but there are so many points that are convenient to the operator using this crown that I do not know where to begin. How many times have you sent a plaster model to your dental depot, to be sure of getting just what you wanted, and received a selection of crowns, some all right for size and shape, except that one was just a little too small at the cervical margin to properly cover the root and make any kind of a joint; the other was just a liitle too large at the cervical margin to allow of a band without cutting into the space mentioned in Fig. 6.

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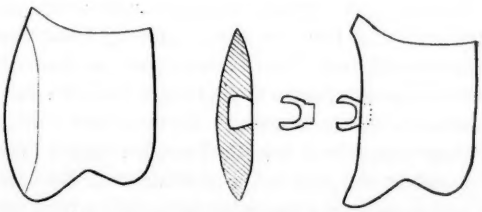

This is not meant to say a word against the Logan for there we have apparently an abundance of forms, but it is true and has happened to all of you. You have found cases you could not fit simply because the Logan was not so constructed as to allow of a greater range of adaptation. In speaking of its not fitting of course I bring it to a fine point. I know there are many dentists who would slap them on and call it an operation if it did overlap or didn't cover, but it is not to this sort of operators I refer, and it is not this kind of a result we are to consider. It is not claimed that if you had just used this crown you would have received the right sized crown at the cervical margin, but it is claimed (to prove the wider range of its adaptation) that with this crown and method of applying the cap you would have been able to adjust either one and do it perfectly. If you refer to Fig. 7 you will see how perfectly it could be adjusted to the first case and have every part of the root protected,

and not have any weak point to be criticised either. Fig. 8 shows how perfectly it could be adjusted where the root is smaller than the crown that would otherwise fit the case and not cut into any space, though of course we would round this angle.

Sometimes it is very convenient to be able to correct a little irregularity in a tooth that it becomes necessary to crown. You can see by using the cap in this way how easy it is to correct a case where the tooth tips too far in or too far out of the arch or one which is rotated, without any more trouble than if it were an ordinary case, and perfectly protect the root.

I have always had trouble in adjusting a Logan to fit the first bicuspid when the roots were bifurcated and have used the Richmond bicuspid. This is a good crown and especially if you wish to attach anything to it. It requires a little more time, but not so much after you make a few, but it has one weak point and that is, if the facing should break it would be difficult to repair. This, however, would be overcome if a detachable facing were used. Fig. 10 will show the application. Here we have a facing baked upon a platinum socket piece which is larger inside than at the surface. This post you see is a spring post which springs into the socket piece in the facing and acts as its bearing. To construct a bicuspid crown with this facing, pass a post into the facing, punch a hole in a piece of backing to admit the post to the shoulder, cut the backing to the proper size and burnish it closely to the facing. Now cut out your crown (which has been previously prepared) so your facing and backing fit it closely, pry out the facing and solder the backing to place in the crown. You may now cement the facing to place, care being taken to fill the space inside of post with cement, which when hard will prevent the arms of post from springing together, making it permanently attached. This does away with exposing your facing to the heat and contraction of the metal, and is a combination which allows of an easy repair. If, for instance, one of these facings should break it would present with the socket piece attached to the post. It would then be necessary simply to pry or cut it off the post, remove the cement inside the post and cement another facing of the same number to place on the post. This principle would apply to any bridge or crown, but my paper confines me to the construction of a crown.

This may be as easily adjusted to a first bicuspid if the roots do

bifurcate; the post may be cut to any size or length and bent into either root, and by the additional strength gained by screwing the cap to the crown there is no lack of attachment.

You can readily see after giving this crown but a glance that it does possess the advantages which I have claimed, and which I will again enumerate, viz., strength, excellence, a wider range of adaptation and an economy of time as well as money, which is a happy combination.

ESSENTIAL OILS IN DENTISTRY.

By B. L. Thorpe, D.D.S., St. Louis, Mo. Read Before the St. Louis Dental Society, June 5, 1900.

The volatile oils best adapted to the treatment of teeth are: Oil of cloves, oil of cassia, oil of cinnamon, oil of eucalyptus, oil of cajuput.

Oil of Cloves, distilled from cloves, the unexpelled flower of "Eugenia Aromatic"; a pale, yellowish, thin liquid, becoming darker and thicker with age and exposure, has a strong pungent odor and spicy taste; a powerful aromatic, possessing antiseptic properties, and is very penetrating. Oil of cloves is absolutely non-irritating to the soft tissues, produces no discoloration, and is a soothing agent which reduces irritation and inflammation. In the treatment of pulpless teeth this is one of the best remedies we have. It destroys septic matter, and is an ideal agent in cases of apical pericementitis, because of its penetrating power and non-irritating effect. In cases of exposed or inflamed pulp it makes a soothing dressing to allay inflammation before devitalization. This is perhaps the best of the volatile oils at our command for general use.

Oil of Cassia, a distillation obtained from the cinnamon bud, light yellowish in color, fragrant of odor, and thin in consistency, is the most potent of all the essential oils as an antiseptic. Dr. A. H. Peck says: "One drop of true oil of cassia will prevent development of bacteria in 2233 drops of infected broth." It is the most irritating and poisonous to the soft tissues of the mouth, and it also possesses such penetrating power as to make it an unsafe remedy in treatment of root-canals of pulpless teeth, for if forced through the apical foramen intense inflammation will follow and the patient will complain of soreness to the touch for several days. Another objection is that it discolors the dentin and enamel to a yellowish brown

color. In the treatment of pus pockets caused by pyorrhea oil of cassia is very beneficial when introduced by the drop syringe. It has a stimulating effect which excites healthy granulation of the soft parts.

Oil of Cinnamon, distilled from an undetermined species of cinnamon grown in China. A brownish liquid, becoming darker and thicker by age and exposure to air, having a sweetish, spicy and burning taste. The commercial oil is obtained chiefly from leaves, stems and young twigs. This oil possesses the irritating qualities akin to oil of cassia, and cannot be recommended for treatment of pulpless teeth.

In mouth washes it has a place, as in the flavoring of tooth powders and pastes.

Ceylon Oil of Cinnamon, a distillation from the bark of the cinnamon tree of Northern India, a pale yellowish liquid, having the characteristic odor of cinnamon, also a sweetish, burning and spicy taste. This oil is recommended by Dr. M. L. Rhein in treatment of deep-seated cavities, where the pulp is covered with a thick leathery-like layer of dentin. The loose decayed dentin is removed, the cavity sterilized with H_2O_2 or some like antiseptic, then flooded with absolute alcohol and dried with hot air. The cavity is next swabbed with the oil and it is dried and driven into the tubuli with the hot air syringe. The oil thus applied destroys all remaining bacteria and practically embalms the dentin.

Oil of Eucalyptus, distilled from fresh leaves of eucalyptus tree, a colorless or faintly yellowish liquid, very aromatic, pungent, spicy and cooling to the taste. This oil is of especial value as a dressing for canals after the removal of a freshly devitalized pulp. It possesses a soothing and non-irritating effect, and is of value in moistening root-canals before filling with gutta-percha, as it acts as a lubricant and solvent of gutta-percha and makes its introduction easy. Eucalyptus is preferable to chloroform, the latter evaporating, while the oil does not and leaves the gutta-percha a solid mass. This oil is one of the many agents used that does not stain the dentin and enamel.

Oil of Cajuput, a thin bluish green, or, after rectification, colorless liquid, having a peculiar, disagreeable odor, and an aromatic bitter taste. The green color is due to traces of copper. This drug is an excellent internal local stimulant, but its main value in den-

tistry is for moistening root-canals before filling with gutta-percha. When the walls of a cavity or canal are moistened with this oil gutta-percha will cling tenaciously to them. The essayist has found it of especial benefit in setting porcelain or porcelain-faced crowns, by applying gutta-percha to the post, heating and fitting in the root while the root is wet. The exact amount of gutta-percha may be determined when this is accomplished. The canal should be dried and then flooded with oil of cajuput, the gutta-percha warmed, and the crown slowly and steadily forced to position. This method makes it possible to remove the crown easily by the application of heat, if the case should require.

The therapeutic action, antiseptic properties, penetrating power, and pleasant odor and taste should give the essential oils a place in our daily practice.

PRESIDENT'S ADDRESS.

By A. N. Ferris, D.D.S., Waterloo, Iowa. Read Before the Northern Iowa Dental Society at Clear Lake, Sept. 5–8, 1899.

When invited to attend the first meeting and organization of this society in 1895 I did not have much faith of its success, but after reaching the meeting I realized that here was an opportunity for a good society, one which would bring under its influence younger men and those who did not attend any dental organization. At the start we had twenty-nine charter members, and now our numbers are nearly one hundred. This organization has not detracted from the state society, but rather has been an inspiration to its members, as they have become more interested in society work, and many outsiders have united with the state body who would never have done so but for our influence. The same is probably true of other societies which come up under great opposition from those already established.

I would speak of the possibilities yet in store for and to be attained by the dental profession. Dentistry is less scientific than it should be. We as a profession know too little about preventive and systemic treatment, predisposing causes, inherited or constitutional conditions. We read too little and do not study deep enough; our experiments are too meager, and we do not aim high enough. We are too careful about burning gas at night and too ambitious to administer it in the daytime; also too much interested in outside

affairs which are not intended to build us up professionally. It is easy enough to propound a theory, but same should be backed up by real facts, truths worked out by systematic and methodical experiments. "An ounce of practice is worth a ton of theory."

Is it not presumable to believe that the time is coming when there will be specialists for preventive treatment, systemic and local, to ward off diseases with which dentists have to deal, such as caries, pyorrhea, chemical erosion, calcic waste in pregnancy, hypersensitive dentin, etc.? Such a one might be called the preventive dental specialist.

It is not possible for any one man to make deep researches and experiments in all phases of dentistry. The natural life of mankind is too brief, but after one has had a thorough literary education, and a good foundation of general knowledge in dentistry such as should be given in our colleges, he can then select some special field to practice and become proficient and even expert in it, thus becoming more useful to humanity, more noted in his profession and more satisfactory to himself. To be successful in a specialty one should use care in his selection and take that for which he is naturally gifted. Specialists in dentistry are surely coming; in fact, the large cities already have them in a moderate degree. When this condition is brought about the profession will not seem so overcrowded as at the present period.

The time has come when students should be required to have diplomas from reputable literary institutions before they enter the dental college, so that they may have sufficient knowledge to carry on deep researches scientifically and intelligently. I need not comment on the greater prestige this will give us as professional men. How many of us now regret that we did not have this knowledge as a foundation. Dental instructors who are real teachers should be selected, those fitted for this special duty, and they should also take special training to fit them for the work. This may seem to you as putting the standard very high, but do not most of us feel that we did not aim high enough in life's plans, and that we could have reached higher altitudes professionally had we been better trained and less content to remain on the lower rounds of the ladder.

Finally, I would recommend that this society use its influence and concur in the suggestion offered by President De Ford of the state society in regard to state legislation; and with such earnestness that

our legislature will also require every dentist to subscribe to a code of professional ethics, and thus help down the extensive quackery which is a growing menace to our noble profession and to the community at large.

CARELESSNESS IN DIAGNOSIS.

By F. F. Fletcher, D.D.S., St. Louis, Mo. Read Before the St Louis Dental Society, June 5, 1900.

It is well known to us all, that when a medical practitioner is called to see a case, no matter how trivial, he makes a diagnosis prior to prescribing, and same generally consists of securing the patient's version of his or her ailments, supplemented by his own examination. This may be more or less thorough, but in disorders of the stomach and the entire alimentary canal, caused by imperfections in the masticatory apparatus, the verdict is often superficial, judging from the treatment.

Facial neuralgia is another common disorder, where often the most careless diagnosis is made, and grossest ignorance of the cause manifested. When so afflicted the patient usually informs the physician that it is only a case of neuralgia. This is deemed sufficient, and a prescription given, which is in itself positive proof of the above assertion. Not one of the thirty-two teeth is examined, nor a question asked about them; they are ignored as having no more to do with the case than corns or freckles, and are as little understood by the physician as is the appendix vermiformis.

Let us see if the case should be thus carelessly treated. The trigeminus is involved ; it is the largest cranial nerve arising from two roots, the one from the side of the pons varolii, the other in the medulla oblongata. From these sources it passes to a no less important center than the gasserian ganglion, from whence the superior and inferior maxillary nerves radiate and connect in one way or another with the pulp of every tooth in both arches. When the teeth are all in situ we have on an average fifty-two different apices, thirty in the superior maxilla and twenty-two in the inferior, from any one of which this nerve may become infected and this dread malady be produced. Can a single argument be brought forward in defense of this practice of ignoring fifty-two vulnerable points, and from which fully eighty per cent of the troubles of this important nerve are derived?

Now are we in a good position to criticise our brothers of the medical profession? I fear not. The process of evolution in our profession has been most rapid; inside of fifty years we have advanced from illiterate barbers, extracting teeth crudely, inserting fillings and artificial dentures in a mediocre and unsatisfactory manner, to a separate and learned body of professional men and specialists, taking our place beside the medical man, the occulist, aurist, and all the other specialists in medicine. Let us see if like the athlete we are not developing some organ or set of muscles to the detriment of others, or to be plainer still, are we not developing along the lines of rapidity in operations and money-making, dwarfing our diagnosis and prognosis, thus stifling what should be our highest aim—careful professional work, and higher scientific attainments.

Let me cite a few common cases, compare what is usually done with what a careful practitioner does or should do, and then you may draw your own conclusions. The patient from the age of four to sixteen years presents for your examination. No! in ninety-nine cases out of a hundred it is for relief, the cause generally being a first molar or the removal of a deciduous tooth. In many cases the patient has made the diagnosis and informs the dentist as to the treatment desired. The operator like a dutiful servant accepts both, obeys orders, and patient leaves the office, having furnished the brains, while the dentist contributed the brawn. This was the general practice thirty to fifty years ago, and I must confess it is not an overdrawn picture of what transpires in many offices to-day.

Compare this travesty on a profession with what takes place in the operating room of a thoroughly scientific dentist. After listening to a history of the case and the manner in which it must be treated, he begins his own diagnosis and finds a deciduous tooth the cause of trouble, just as he has been informed, but from this point onward the opinions of treatment diverge. He explains why the deciduous tooth should remain for a period, how its loss at present would affect the permanent tooth, how its absence will cause non-development of the maxilla, malocclusion of all teeth on that side of the arch, etc.

He proceeds to relieve the pain at earliest moment, and continues with his diagnosis, awaiting favorable action of his medicaments meanwhile, calls the mother's attention to the various cavities, sug-

gests proper treatment, and gives his reasons therefor. If it will strengthen his position, need of brush and its use are brought out. A deciduous tooth, retarding eruption of a permanent one, is pointed out and the reason for its removal stated. The root of a deciduous molar is observed, leaning against the first molar, causing it to discolor and break down; an interlocked tooth or other irregularities needing attention, are noted and an orthodontist suggested. The mother at once produces the stock argument, learned from general practitioners incompetent to do such work—that the patient is too young; wait awhile and the teeth will straighten themselves. This is the excuse of the busy operative dentist, and the admission in most instances of his incapacity to perform the work. These false impressions are corrected, and the mother is interested by this time, the little patient has been soothed by our competent operator's kindly ministrations, the unnatural expression, caused by pain, is giving way to the normal, giving him a chance to study the facial lines and contour, compliment the correct, point out the defective, and mention the remedy.

The patient may have any one or many of the above defects, or others which should be pointed out also, as mouth-breathing, enlarged tonsils or nasal obstructions, and the thorough man should go further and call attention to any aural or optical imperfections he might discover, knowing full well he was doing a kindness to the patient in pointing out a fault that might be easily corrected if taken in time, the importance of which was made clear for the first time. And here permit me to state, that every specialist of the eye, ear, nose and throat, as well as the M.D. and D.D.S., should be sufficiently educated as to the anatomy of the jaw and teeth and their surrounding parts, to be able to diagnose diseases and deformities and thus refer them to the proper man for treatment.

By this time the professional man's ability and ripe judgment have made their lasting impress on patient and mother, who have received perhaps more knowledge on the subject in hand than ever before, and who leave convinced that here is a man so thoroughly educated in his profession that they need never attempt to enlighten him on his specialty; one in whose hands they are safe and whose judgment will in future be implicitly relied upon.

Another class of patients present, those entering their teens and up to thirty, in other words, those requiring chiefly operative work.

First the teeth are to be cleaned, only after which a proper diagnosis can be made. It is presumed that the permanent teeth are in place, possibly excepting third molars, irregularities corrected and operative work begun. Again the professional man has a problem to solve that admits of no haste or carelessness. He does not attempt at first sitting to fill all the easy and most accessible cavities possible, and incidentally collect as many dollars as the victim can be induced to part with, judging from appearances and references; but he conscientiously studies the case; makes a careful chart of all work to be done, notes defects in that already inserted, quality of same, ascertains length of time since fillings were made, quality of caries present or immunity, tendency to pyorrhea or other diseases of the oral cavity, either present or possibly to be inherited. With this data he is ready to commence operations on a scientific basis, and from this point on his diagnosis and operations must go hand in hand.

In preparing cavity he discovers quality of structure, vulnerable points, whether in approximate cavities he must use extension for prevention or not; notes peculiarities in saliva, whether acid or alkaline, and to what degree; chooses the most suitable filling material for each cavity, and so progresses on a high plane of scientific and intelligent work, being careful to instruct his patient to use his own efforts along those lines conducive to best results. A man following this course can but gain the confidence and admiration of his patient.

The third and last is that class from middle life to old age, where our work takes on additional burdens, including restoration of lost organs and treatment of diseases in various forms. Here again true or false diagnosis leads rapidly on to success or failure. Here we are often called upon after the family physician and the neurologist have been abandoned, and if we are to be a credit to our profession we must diagnose these cases of neuralgias in their many phases, and the often chronic stomach troubles, and effect our cures by supplying lost organs that will aid, relieve and rest the digestive apparatus and remove the causes that deranged the facial nerves. In our prosthetic work the diagnosis must be extremely accurate; many cases at first glance seem to indicate bridgework. We must study the conditions of the tissues, both hard and soft, the care bestowed on mouth by patient, try to determine the prognosis by

using plate or bridge. In this connection the temperament must be carefully noted. If patient be nervous a bridge is often best if other conditions warrant, while a plate, no matter of what material or how carefully fitted, would increase nervousness and not be successful. In cases of persistent neuralgias the electric mouth-lamp will often assist us in discovering the dead pulp in a tooth otherwise perfect, thus baffling correct diagnosis, but furnishing the poisonous gases that have caused untold agony and defied detection.

Thus all can see that our sheet anchor is careful diagnosis. How many of us take the time to study cases as we should? Is it not time that we call a halt—do less and do it better? "Just as the twig is bent the tree's inclined," and if we train ourselves to diagnose carefully we will soon form the habit which will result in vastly more perfect and satisfactory work, and at the same time lead us upward to a higher professional standard and place us on a more enlightened and scientific basis.

CORKS STEEPED IN VASELIN are an excellent substitute for glass stoppers, according to the *National Druggist*. "Acid in no way affects them and chemical fumes do not cause decay in them, neither do they become fixed by a blow or long disuse. In short, they have all the utilities of the glass without its disadvantages."

NITROUS OXID.—After giving the chemistry of the drug, Grant describes the methods of its use. The known rules in anesthesia should not be overlooked with this anesthetic. An empty stomach need not be insisted on, but it should not be distended. The sitting posture for short operations may be maintained throughout, and the head should be bent forward rather than backward, as there is less danger of the tongue falling back. All foreign substances should be removed from the mouth, such as plates, etc. A prop should be placed between the teeth. The first impression on the patient is a sweetish taste of the gas and a certain sense of oppression. In the second stage there is a tingling sensation and consciousness is lost, and the narcosis deepens into the third or anesthetic stage. The circulatory system is but little disturbed, but the respiratory is more affected and the physical indications are those of asphyxia. Then the anesthetic is profound enough for minor surgery, and the inhaler should be withdrawn and the operation performed. The hemorrhage following the use of nitrous oxid is generally venous and may be profuse an hour or more after extraction. Recovery is usually rapid. The dangers are through the respiratory function, and intensified lividity of the face, great and sudden pallor, and cessation of respiration must be regarded as symptoms thereof. The secondary effects of nitrous oxid are trivial; there is no proof of secondary serious complications.—*Jour. A. M. A.*

Digests.

EARLY SIGN OF TUBERCULOSIS. Writing under the above caption, Thos. F. Harrington (*Phila. Med. Jour.*, April 28, 1900), calls attention to the fact that he has noted a dilated state of the pupils in a number of cases which subsequently showed signs of tuberculosis pulmonalis. In other words, he claims for it a place as one of the pretubercular signs. He says that it is not a state of paralyzed pupils, but rather one which seems to be in a more or less constant state of dilation, due to some irritation along the cilio-spinal region; or perhaps an irritation of the sympathetic, brought about by some blood change associated with very early tubercular infection not yet fully recognized. The writer says that he has observed this condition many times, and that almost invariably these patients afterward showed unmistakable signs of tuberculosis.

If this state of dilated pupils is really a sign of the pretubercular stage of phthisis, it will become one of the most valuable signs yet given to the profession for the recognition of any disease, for we know that if we can recognize this dread disease in its very incipiency, much more can be done in the way of climatic treatment and medicinal regime than is the case when the disease is only recognized by the presence of the bacilli in the sputum or by the onset of physical signs.—*Interstate Med. Jour.*

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DEFENSE OF THE ORGANISM. Meltzer maintains that the prevailing opinion of bacteriologists, who regard the defense of the body against hostile germs as due exclusively to a single element, whether it be alexins or leucocytes, is neither correct nor advantageous. He believes that it is not by a single tissue or a single function, but by concentrated action of independent factors that this defense is maintained, and illustrates this by the conjunctiva, which is usually sterile, notwithstanding its constant exposure. The causes of this are the reflex closure and blinking of the eyes and the bactericidal effect of the tears; similarly the respiratory organs, which are constantly invaded, are protected by the tortuous part of the upper portion of the tract, the action of the epithelial cilia, and the thinness of the epithelial layer, admitting the bacteria

quickly to the lymph-glands, which take good care of them. Other defenses are the spincter muscles at the entrances of some cavities of the body, and such secretions as tears, saliva, mucus, etc. Two new factors, however, which he thinks assist in the work of destruction of bacteria in the body are proposed. One of these is plasmolysis. He attributes to different osmotic pressures of the fluids the important part in this function. The second new factor is the heart's impulse. A certain maximum of vibration is indispensable to all forms of life, and can not be overstepped by any one. Every species has its certain individual minimum in this respect. He thinks that the vibrations emanating from an impulse of the heart probably form the optimum of the vibration for the living cells of each individual animal. Recent experiments have shown that the vibrations communicated through the body by the heart are deleterious to extra-vascular dead blood, and the suggestion which he wishes to make is that those emanating from the heart-beat of the animal are more than a maximum for all the bacteria invading the interior of the animal body, especially in the injured state in which they are placed by the other influences of the body, for instance, by the plasmolysis. Thus, while we constantly live in a state of latent infection, as Adami calls it, it is not a foe to normal health or life, but is rather a confederate in their defense.—*Jour. A. M. A.*

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STATEMENTS OF EXPERTS ARE ADVISORY ONLY. This is the view taken by the Supreme Court of Missouri. For example, in the malpractice case of Hoyberg vs. Henske, the jury was told, in effect, that in determining the question as to whether or not the defendant exercised such skill and care of the plaintiff's broken arm as, under the law, he should have exercised, it was not bound by the opinion of expert witnesses, but had the right to disregard all or any part of such opinions as appeared to it to be unreasonable. In this instruction the supreme court says that it fails to recognize the vice which counsel sought to point out. It is the established law, as declared by this court, it goes on to state, that where experts are called to testify, their statements are not to be considered as evidence of facts, but are of an advisory nature, and they are permitted to express opinions because of the peculiar knowledge they possess. But the court continues, juries are in no wise bound to blindly accept their ideas, but, after receiving the

advice of experts, are permitted to use their own judgment in passing on the things concerning which the opinions are given, and they are necessarily permitted to disregard the testimony of such experts as may appear to them unreasonable. Were it not so, the court thinks that, because of the widely diversified notions and wholly different results arrived at by separate individuals, even when forming conclusions on the same facts and circumstances, juries would be wholly at sea, and to refuse to permit them to be their own judges of what is reasonable and what is unreasonable would operate as a failure of the purposes for which they are called in this class of cases. Nor does the court appreciate the force of the criticism that instruction under discussion was defective in that it failed to tell the jury that, in order to disregard the opinions of the experts presented to them, they must do so solely on some other facts and circumstances in the case drawn out by the testimony. It maintains that the right of a jury to reject the mere opinion of an expert or experts is not more restricted than the right to reject the testimony of a nonexpert upon a question of fact. Juries are required, in cases of this character, to apply their own knowledge and judgment, and the issue is to be determined, not merely by the opinion of the experts, but, further, by the exercise of their own judgment of the facts on which the opinions are given. Finally, a verdict of $5,500, the court holds not excessive for malpractice, where a child 4 years of age broke one of the bones of the left arm, just above the elbow, by a fall from a lounge, and treatment was such that the arm festered and parts of flesh came out and then left the arm without strength from elbow down.—*Jour. A. M. A.*

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EXPERIMENTAL REPRODUCTION OF DENTAL CARIES.

M. J. Choquet has recently made some experiments on the propagation of dental caries by direct inoculation of healthy teeth with the carious microbe, and the results were read before the Academy of Sciences in Paris on April 2. That dental caries is due to a microorganism has been established by the labors of several investigators, but its reproduction by direct experiment has not as yet been demonstrated. From three filled teeth, the filling of which had remained intact for periods varying from three to seven years, he succeeded in isolating five species of microbes. Of one of these he was able to obtain pure cultures. The characters it presents are that it is short,

mobile, ramifying when growing in extract of meat, and incapable of liquefying gelatin. It does not grow on or in gelose, potato or serum. On gelatin peptone it forms colonies only on the fifth or sixth day. These are oval in form, opaque, and whitish in color. The growth is greatly favored by the addition of 1 per cent of glycero-phosphate of lime. It is a facultative anaerobe with disposition to develop more rapidly in vacuo. It causes glycerin, mannite, glucose, galactose, saccharose, lactose, maltose, dextrin and mulin to ferment. It is without action on dulcite, erythrite, arabinose and the nitrates. It does not peptonise albumin nor does it coagulate milk. It does not liquefy starch paste, neither does it form indol with peptone. M. Choquet having obtained a pure culture of the microbe made a small cavity on the labial side of the incisor of a sheep, not so deep, however, as to penetrate the pulp cavity. A small platinum cup, sterilized by fire and charged with the culture, was introduced into the cavity so that the culture was in contact with the dentin and the hole in the tooth was plugged. Nine months afterwards the tooth was examined. The bottom of the cavity was of yellowish color, due to dentin being softened by action of microbe. Cultures from the carious portion of tooth gave a bacillus of the same form as that used in the experiment. The same results were obtained in two other cases.—*The Lancet.*

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LONGEVITY OF DENTISTS. By Waldo E. Boardman, D.M.D., Boston. Read before Harvard Odontological Society, Dec. 7, 1899. A great deal of discussion has been given in dental societies relative to the short life of dentists as a body, by reason of the physical and mental high pressure to which they are subjected; that their lives are imperilled to a greater extent than are those engaged in other professional careers; that they are overworked and labor in poorly ventilated quarters, irregular in their habits, inhale the breath of patients, and in the position at the chair are stooped, cramped and strained, and often for hours maintain such positions; that they labor too many hours, do not take the necessary recreation, too few if any vacations, etc.—all tending to nerve-strain, so frequently referred to in discussions of the questions pertaining to our calling.

We are subjected to the exacting duties above depicted, many lead sedentary and practically inactive lives, inhale fetid breaths and

exhalations from the bodies of patients, some of whom may not be scrupulously neat and clean; others are weak and nervous and come to our chairs in fear and trembling, which adds to the burden put upon our nervous force. The exacting duties of dentists have often called forth from my clientele remarks upon the unhealthy duties of our professional calling, and they have cited in support of their contention much of what has heretofore been mentioned. It is the general opinion of the laity that we, as professional men, are pursuing an unhealthy occupation.

It is not my purpose here to refute by argument what has been noted thus far, but rather to present facts bearing upon this subject for your consideration, and thought by the speaker to be quite conclusive that dentists, as a body, do live the average length of life allotted to those engaged in other professional pursuits. No doubt we labor under poor hygienic conditions comparable with the dignified callings of law, divinity and medicine, for we are at all times in contact with varying classes of individuals under different degrees of hygienic ideas. After all, do not dentists in many instances live to a green old age?

Several years ago the writer was delegated to prepare for publication a catalogue of past students of a professional school which covered a period of three decades, and in so doing he had not only to ascertain facts of those past living students, but of those who had died, and the causes of death. This set him to thinking upon this subject. Still further, he has made search through records of the past fifty years and gathered statistics of all recorded deaths of dentists given by the dental journals, and herewith presents part of the data obtained.

Many believe that consumption is the great destroyer, while others believe Bright's to be the chief disease. Is the dental profession an unhealthy one? Do dentists live as long as those engaged in other professions, and do the following facts warrant us in believing we are following an unhealthy occupation? So far as I have been able to verify from the records of the past fifty years, the facts are found to be very different from what was anticipated, for it was supposed that consumption was practically the principal cause of dental mortality. From the records of between five hundred and six hundred dentists who have died, I have the statistics of sixty-five diseases, eleven of them named below and divided as follows: Heart dis-

ease, 53; consumption, 42; Bright's, 27; pneumonia, 21; typhoid fever, 20; paralysis, 19; accidents, 16; cerebral affections, 13; stomach disease, 11; cancer, 5; suicides, 5; no disease given, 119. Total, 351.

Their ages ranged from twenty-two to one hundred years. Of one hundred and seventy-six dentists whose years of practice are known, I have figured as six thousand and twenty-nine, or an average of over thirty-four years in practice. Table of number of deaths, showing average age by decades, and average age of the total:

Age.	Number of Deaths.	Total Age.	Average.
22-32	81	2,242	27.67+
33-43	63	2,435	38 65+
44-54	87	4,262	49.
55-65	110	6,555	59.13+
66-76	114	8,093	70 99+
77-87	52	4,182	80.42+
88-100	5	474	94 8
	512	)28,243	
		55.16 years.	

As an addenda, let me quote from the statistics as given in 1892 relative to Great Britain, viz., that the average life in Great Britain is nine years longer than fifty years ago. Furthermore, I quote from a speech of Dr. J. Y. Crawford, that "modern dentistry has exerted greater potency than all others in bringing about this felicitous [longevity] result. No intelligent observer will deny that the great awakening of civilized men, particularly noticeable in the United States, as to the importance of preserving the natural teeth has, in the last half-century, been a perceptible influence in bringing about the increased longevity, and that it will be still greater in the future." This will also apply to dentists, for their teeth are cared for as well as those of the laity.—*International, June, 1900.*

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ROMAN MONK DENTIST. The correspondent in Rome describes the workshop, near the bridge of Quattro Capi, of Fra Orsenico, a monk, "who, year after year, standing on the same spot, had grown gray in performing one kind of dreadful service for the poor." There, on the far side of the Tiber, in a little room by the bridge of the Quattro Capi, is a Frate, to be seen any time, who has been there these twenty years, doing the same thing day after day

for the love of God and his neighbor. Close by the west end of the old bridge is a large glass door opening into a little room, and above the door is a piece of faded tapestry, upon which in yellow letters are worked the words "Fra Orsenico, Dentista." Fra Orsenico is a tall, powerfully built, gentle-looking man of about fifty, and ever since he was thirty he has outwardly at least limited his life to the fulfillment of one corporal work of mercy. From sunrise to sunset he is there at his post ready to pull out the teeth of all who suffer and come to him, and without charge of any kind except a request for three Hail Marys. The walls of the room are covered with pious pictures; but it requires an effort to look at them, for the eye is instantly arrested by other objects. Along one side of the room and beneath the table upon which the Frate keeps the tools of his trade are two solid oak chests, without lids, and filled with teeth. Thousands and thousands of teeth of all sizes lie piled up there in those boxes—the results of the Frate's industry. Above the table is a narrow shelf of wood which runs round the room, and upon which are lovingly arranged all sorts of monstrous fangs, stubborn stumps, that it required a triumph of skill and strength to extract.

Fra Orsenico, who is dressed in the black habit of a Brother of St. John of God, told me in a quiet, simple way, that he generally pulled out daily about 100 teeth, and that he had drawn as many as 400 teeth in a single day. And he has been doing that for twenty years. Then, glancing uneasily at the little mountain of bones with their streaks of dull red beneath the table I asked the Brother how many teeth he supposed he had extracted from first to last. He smiled slowly and then said vaguely, "Perhaps millions." I should perhaps have gathered some further particulars about this strange and devoted man, but before I could ask any further questions the door opened, and a feeble, poorly dressed old woman hobbled in, and without speaking sat down. One could have hoped that her withered wintry old age would have spared her that sort of trouble: and somehow I had not quite realized what she had come for, when Fra Orsenico asked me if I would like to see the operation—it would be over in a moment. It was meant in all kindness; and I am afraid my leave-taking may have seemed a little abrupt. As I hurried across the bridge I saw a sight which seemed like a shadow across the sunshine. A child was being dragged by

two people, who from their obvious sense of possession I knew were her parents. When they had passed I looked back, and they too were going to Fra Orsenico. It is probably not necessary to add that the Frate's methods are very simple. A tooth that is drawn can never ache again, and anesthetics are costly and require a great deal more time than the Frate has to give.—*Tablet, London.*

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SOME EFFECTS OF IMMIGRATION FROM A DENTAL VIEW. By F. R. Dickerman, D.M.D., Boston. Read before Harvard Odontological Society, Sept. 28, 1899. Let us take Boston as a typical large city of the eastern district of the country. We find that in 1895 the percentage of foreign born to the total population was about thirty-six per cent; those of foreign parentage to total population, about seventy-one per cent. Such a percentage would hardly prevail outside of the large cities, except in particular localities almost exclusively settled by a certain class. These localities generally call for some special class of labor, and the products of this class of labor form almost the entire bulk of production of that locality. In a measure, these comers from other lands may be divided into two classes—those who become citizens after a due lapse of time, and are probably in the majority, and those who do not care for the rights of citizenship for various reasons.

It has been stated that in proportion as these new-comers become citizens so much the more readily do they become assimilated; the racial lines are broken and set aside and a general broadening of that people occurs. Intermarriage of this class with outsiders, if we may call them such, is more common than with those who do not become citizens, always excepting those who are closely bound by some religious faith and by customs subservient to that faith. It seems to me that if one could follow out a line in this breaking down of racial distinction on the one hand, and the drawing closer and firmer on the other, some very interesting features would come to light.

Students have presented to us their views on heredity as concerns crime, pauperism, insanity, and various other matters, and it would seem that the laws that govern these things would also control the physical characteristics of a people. These characteristics would of course include the physical development of the jaws and teeth.

Those of us who are in the smaller cities and towns and who do

more of a general practice than our city brethren, may often note that the teeth of those who are foreign born and who have attained middle age or more in this country, present widely varying features. This difference ranges from one or two pin-head cavities in an otherwise almost perfect set of teeth to a most complete wreck of what was the same almost perfect set of teeth ten years, or even less, before. These teeth when good are usually short, thick and of a yellow tint, the bicuspids and molars are short, heavily covered with enamel, and nearly square in shape. The third molar is fully developed and occludes well with the upper one. However, a very small cavity in these teeth causes much trouble from the extreme sensitiveness. Where one or two teeth are missing from such a set, the left inferior first molar is more apt to be the favorite; if another should be missing, the chances are more than good that it would be on the right side—more often the upper second bicuspid or first molar.

Then we have the same kind of teeth almost entirely destroyed by black or brown decay, attrition, and crumbling. In other cases the teeth are lost wholly from pyorrhea. This trouble generally winds up the career of the teeth of this class. Then we see those who have indifferently good teeth in their native country; cases where the white horn-like decay has reduced the teeth to a choice collection of roots and abscesses; this results from a five years' or less residence in this country, no sickness of importance or other contributing cause being known. This statement is upon the patients' authority, so there may be some slight contributing cause after all, but it is quite doubtful. In these cases which I have cited the employment, habits, manner of living, and (pretty nearly the same) diet were about the same as those of their native country.

Right here I would say that I do not wish to convey the idea that before these people came to this country they did not suffer with toothache and other kindred ailments, that all immigrants have good or even fair teeth, or that in their native country there were no bad teeth. People in those countries do have toothache and do have bad teeth—in some cases notoriously bad teeth. In order to watch the deterioration of a tooth, we ought to have a tooth to start with and to watch. Therefore I have made no account of the collections of roots and abscesses with which some of these people burden themselves.

Foreign-born children of foreign parentage coming to this country seem to suffer for a time more severely than their parents, but in the end apparently come out as well if not a little better. Coming here at the age when they are about to cut the permanent teeth, the temporary teeth suffer quite badly, crumbling away until not much is left but the roots. These roots are left in many times, and quietly go about their work of keeping space for the permanent teeth or favoring irregularities. The permanent set does not seem quite so good as that of the father, but they still may be good teeth. Possibly there may be required half a dozen fillings to put them in good order, and the fillings, if properly done, remain in place for a long time.

Later the lower third molar will probably be lost either from crowding or bad texture. Such teeth are quite liable to decay, but there will be a large amount, comparatively speaking, before discomfort is felt, and these teeth may remain in use several years longer than those of their parents.

American-born children of foreign parents are especial sufferers with the early decay of the temporary set. The teeth crumble and wear away to the gum line, and alveolar abscess steps in on the slightest provocation. Then by forced premature extraction, crowding and irregularities may result. The lower first molars are not of much account in these cases, and are lost anywhere from the seventh to the tenth year, or just about early enough to let the second molars into the space, giving a fair grinding surface. Later the upper first molars and bicuspids may be lost.

A comparison of these two classes just mentioned—foreign-born children of foreign parentage and American-born children of foreign parentage—would show hardly any difference on the whole. If one suffers most at one time, the other seems to be in as much trouble later, so it is almost an even thing.

As a fitting illustration of the three types before mentioned, I will describe three sets of teeth, all of which I have seen within a year and a half. Their possessors also represent three generations —grandfather, son and granddaughter. The grandfather is a native of the Western Islands, about sixty-five years old, a carpenter by trade, and came to this country twenty-eight years ago. He still has a complete set of teeth, in which I was able to find two small cavities only, and in these decay had evidently stopped some time

ago, and they cause no discomfort. The teeth are quite well worn, and the gums have receded somewhat. An upper lateral was broken by accident. With these exceptions the teeth might be called perfect.

The son is about thirty-seven years old, carpenter by trade, and came to this country when about sixteen, to escape conscription for the military service required. His teeth seem to be about as good as the father's, but the bicuspids and molars are not quite so large. He has four fillings, mostly in the molars. The left lower first molar is missing.

The granddaughter is about eleven, and what few teeth of the temporary set that are now left are as bad as can be imagined. These teeth of the permanent set which have come through are fairly good and strong. Three of the first molars have small fillings in them. Just how these teeth will eventually turn out is, of course, wholly problematical, but now they bid fair to last her as long as she has any need of them, providing a reasonable amount of care be expended on them.

In a locality where a certain race of foreign-born people collect and settle permanently, because their special kind of labor is called for in that locality, we may find a type of jaws, teeth and facial characteristics transmitted from generation to generation. These people seldom marry outside of their race, and in many cases keep to the customs and habits of their native land, unless the police and health officers interfere. These customs have a direct influence on the mental and physical welfare of such people.

Again, in a locality where the population has a lesser percentage of foreign-born parents, but still a respectable percentage of the whole, we shall still expect to find a certain type of jaws and teeth and other characteristics peculiar to that people. In their descendants are found that same type, or traces of that type modified more or less by intermarriage and environment. In the one case the type tends to be perpetuated; in the other it seems to merge into another distinct type. So this merging-into-something-else process may go on until at some time in the far future there will be found a certain composite, which some very learned person will designate as the American jaw, the American teeth; perhaps he will go farther and add the American face. Possibly this American face will have something of the "white man's burden" in it, possibly not.—*International, June, 1900.*

SHOULD THE MEDICAL UNDERGRADUATE BE INSTRUCTED IN THE PRINCIPLES OF DENTISTRY. By M. L. Rhein, M.D., D.D.S., New York City. Presented in a symposium on Dental Education before the Section on Stomatology of the American Medical Association, June 5-8, 1900. It is at the outset necessary that the term "principles of dentistry" as used in this paper should be specifically defined. Such a definition is required, both because there should be a definite understanding of the points that the discussion should embrace, and because, mindful of the fact that the path of the medical student already bristles with subjects, we should be loath to add an unnecessary amount of work to his daily routine. A requisite knowledge of the shape and uses of the various dental instruments cannot be expected of the general practitioner; indeed, all the variations in dental technique as applied both to laboratory and operating room are distinctively beyond the scope of dental principles, in their relation to general medical education.

The question at issue then narrows itself down to the advisability of the medical undergraduate being acquainted with principles of dentistry as they bear on general medicine. That the general practitioner should appreciate fully the process of dentition, in its relation both to local and constitutional results, cannot be denied. Equally as important is it that he should be able to distinguish an incipient alveolar abscess from tic-douloureux, simple caries from caries complicated by exposure of the pulp, or the inflammation attending the eruption of a third molar from that caused by follicular tonsilitis. The medical undergraduate should be taught that no tooth need of necessity be lost through the ravages of caries; to judge of the efficacy of remedying these carious defects he must of necessity be able to appreciate whether or not a tooth cavity has been properly filled. He should be taught to know that more teeth are lost through disease of the peridental membrane than through all other pathologic conditions of the mouth combined, and that prophylactic measures tending to preserve this membrane are of vital importance. He should be made cognizant of the intimate relationship existing between the general nutrition and proper mastication, so as to realize when artificial teeth are required, and if supplied, whether they are properly inserted. Such knowledge implies a proper understanding of the normal occlusion of the upper and

lower teeth; it also leads to the appreciation of the value of orthodontia as a corrective for malocclusion.

A proper appreciation of the foregoing facts necessitates that medical undergraduates be taught dental embryology, anatomy, histology and pathology, in order that these principles should form a foundation for a correct clinical observation of oral conditions. This will enable the general practitioner to serve best both his own interests and the interests of his patients, and at the same time tend to elevate the standing of the dental specialty.

No more opportune time than the present could have been selected for this discussion. For through the efforts of our medical schools, and of our state boards of medical examiners, the standard of medical education is advancing yearly. Moreover, this is an era of curriculum extension in all of our medical schools. With the advent of each scholastic term there is either an extension in the number of subjects taught or a marked improvement in the methods of teaching them. Physiologic chemistry, bacteriology, orthopedics, and the other limited specialties are yearly receiving more attention and very rightly so. Yet this era of educational progress is utterly ignoring the importance that the principles of dentistry should play in the education of all medical undergraduates. Dental instruction not only is not represented by any individual chair in any of our large Eastern medical schools, but the teaching of dental principles is not embraced in any of the allied chairs of medical instruction. A medical education which neglects to train the undergraduate in the principles of stomatology is deplorably deficient. Thinking thus, we desire to show not the *modus operandi* by which the medical curriculum should be recast or altered, but rather the disadvantages resulting from the present deficiency in medical training and the advantages to be gained by supplying this deficiency.

Such oversight in the method of medical instruction results in creating a disposition on the part of the general practitioner, not only to underestimate the importance of the principles of dentistry, but also to consider the dentist rather as an aid to comfort than as an active and important element in preserving the human economy. The evil results of the medical undergraduate's lack of knowledge of dental principles are all-pervading. On the staff of our hospitals it is rare to find a dental specialist; yet only obstinate bigotry may deny the frequent occasions that distinctively demand dental treatment.

The poor results that have attended the long-continued agitation for dental representation in the army service well illustrate the poor esteem in which dentists are held by their medical colleagues. All this, too, despite the fact that the recent war demonstrated beyond a doubt that lack of official attention not only worked havoc among the soldiers, but also required the establishment of the sporadic and so-called "dental tents," where emergency dental work was performed by volunteers, taken mostly from the ranks.

Not less productive of evil results is the lack of dental representation in our naval service; for can a more disagreeable exigency be conceived than an intractable toothache occurring in a naval cadet on a cruise miles from home—a simple case for a qualified dentist to handle, and yet one which at present usually results in the extraction of the offending tooth, and the conversion of a possible future naval officer into an incipient cripple? And all this, because our medical confrères have failed to appreciate the importance of dental principles.

That ignorance of the principles of stomatology characterizes the general medical practitioner cannot be denied; and as a result of this lack of knowledge his opportunities are greatly handicapped, owing to his inability to appreciate the diagnostic, therapeutic and prognostic aids afforded by the clinical appearances found in the oral cavity.

As regards the diagnostic aid offered by the mouth, a thorough appreciation of normal appearances is both presupposed and necessary, in order to enable the practitioner to recognize the significance of incipient pathologic changes symptomatic of systemic disease. A red, dry, glazed tongue, with characteristically swollen, hemorrhagic gingivæ, and rapid caries of the teeth are frequently the only signs of an incipient diabetes. Likewise the characteristic whip-cord-like tumefaction of the gum, over the palatal surface of the teeth, is one of the earliest signs of chronic Bright's disease. Similarly in gout one of the earliest manifestations is the hard, smooth, blackish incrustations of salts found on the roots of the teeth. The peculiar linear discoloration of the gums, found as an accompaniment of metallic intoxication, renders the diagnosis of these sometimes obscure cases both easy and assured. In infantile scorbutus there is no sign of more diagnostic value than the spongy, bleeding, hypertrophied gums, accompanied by an extensive resolution of the infantile tooth structure. Finally, it may be said with confidence

that study and observation of the oral cavity will yield many more invaluable diagnostic points to the seekers of them, and thereby serve to lighten the task of the well-grounded general practitioner.

As regards the aid in therapeusis afforded the general practitioner by the recognition of oral malconditions, it is necessary only to recall the pertinent relationship existing between the many neuroses and caries of the teeth. A few citations will best illustrate this fact: Remedying a carious and irritable tooth has often succeeded in abating the intractable vomiting of pregnancy; in the treatment of chorea, attention directed to carious teeth, considered as centers of reflex irritation, has often lessened the severity of the nervous affection. And finally, how well we know the numerous forms of neuralgia that baffle medical skill until the dentist discovers an exposed pulp and removes it.

As regards the influence of oral conditions on the prognosis of systemic disturbances, we have here a field whose full value is unknown not only to the general practitioner, but also to many dentists. The minute difference in local appearances can not fail to suggest to the careful observer a proportionate idea of the systemic disturbance, and thus these appearances lead to a much more exact prognosis. At a recent meeting of the Odontological Society of New York I recited the history of a case of miliary pulmonary tuberculosis, in which, with no clinical knowledge of the case, I was yet able to give an absolutely fatal prognosis, based on conditions found in the mouth, and unfortunately verified later by the course of the disease.

Thus far we have attempted to outline those principles of dentistry, the knowledge of which would be of undoubted value to the general practitioner of medicine, and which, therefore, he should learn as a medical student. Not merely from the standpoint of the general practitioner of medicine, however, should this question interest us. As dentists it behooves us not to lose sight of the fact that the education of medical undergraduates in dental principles would serve a double utility. There would result an incalculable gain to the medical man, it is true, but it is equally undeniable that the dental profession would also greatly profit by such an educational advancement. The newly developed ability of the medical man to recognize early pathologic conditions of the teeth and mouth would result in more thorough-going prophylaxis, and in the earlier

application of treatment. Even more than this, the properly educated medical practitioner would recognize innumerable cases of important diseases of the mouth that would otherwise run their insidious course unnoticed and untreated. Granting that early recognition and the early application of treatment were in force, the task of the dental surgeon would thereby be rendered not only less arduous and more satisfactory to himself, but also far less unpleasant to his patients.

Nor is this the only benefit that the dentist would derive from such a change in the medical undergraduate's curriculum. I vouchsafe that there is known to all the members present to-day that class of dentists who, like the proverbially stubborn bird, can work well but refuse to do so. Good dental work is distinctly time-consuming. There are any number of men eminently fitted to do excellent dental work, and who indeed do accomplish excellent results, until they have established a fairly large clientele. Then, suddenly discovering that their rewards are seemingly incommensurate with their labor, and realizing that the discrepancy is due to the time consumed in doing proper work, they sacrifice their ideals. Such a sacrifice is made largely because the dentist realizes that he is the final judge of his own work. He is fully aware of the general practitioner's inability to pass judgment as to whether his patients are receiving intelligent or mediocre treatment. Armed with such knowledge, the unscrupulous dentist is able to continue the nefarious practice of working against time. The claim that the patient's appreciation of proper work serves as a check against such undesirable practices is not tenable; for the average patient does not value a piece of work properly. Appreciation of dental work is in a large measure regulated by the confidence reposed in the dentist by the patient; and an incompetent politic man often succeeds better in inspiring his patients with confidence in him than does an honest, qualified practitioner.

I have compared the above class of unscrupulous dentists to the bird that can but will not sing. The analogy may be carried further. The little bird, you know, was made to sing, and likewise the capable dentist can be made to do proper work. Let him realize that Dr. A., who sends him many patients, has graduated from a medical school where dental principles receive merited recognition, and that he therefore values good dental work and discovers faulty

results; and the dentist will cease to work against time and attempt rather to maintain the professional opinion and favor of Dr. A. In this way the education of the medical undergraduate in dental principles will serve to bring about a much needed elevation in the standard of the dental specialty.

Still another way remains, by which an addition to the burden of the medical student's work would redound to the well-being of both dentist and general practitioner. I refer now to the cultivation of a stronger bond of sympathy between the two branches of practice. Educate the medical man properly and he will learn to appreciate the dentist at his true worth. The value of the dentist's advice and opinion will be on a par with the advice offered by the ophthalmologist, otologist or laryngologist. He will be consulted by the general surgeon before a plastic or prosthetic operation is done on the jaws or mouth, and his ideas will be sought by the general practitioner attempting to treat an obscure lesion of the alimentary tract, which might have some connection with oral disease.

Valuable as such a change in medical education would be, and productive of unlimited good, it is nevertheless opposed on various grounds and for numerous reasons. A discussion of the subject, therefore, would be lacking in completeness did it not consider these objections and show the tenuous foundations on which they rest. First of all we meet the statement that the medical, of all other professional students, labors most. His days are taken up with practical work and his nights with study, and it would therefore be impossible for him to shoulder an additional burden of work. That the medical undergraduate's lot is an arduous one none of us can gainsay, yet the scope of his work never has and never should be regulated, either by his capabilities for strenuous labor or by the amount of time requisite for him to complete his course of study. It must not be imagined that the additional amount of study would be excessive; for it is not the mastery of dental technique that is asked of the medical undergraduate, but merely that he acquaint himself with those oral conditions having a bearing on systemic disease. The problem before him is solvable, even if it be difficult. His utility to the community depends on his ability to recognize and alleviate disease; and if a knowledge of dental principles will aid him, as it undoubtedly will, this must be acquired, at whatever cost of additional expenditure of time and labor involved.

This objection disposed of, what can be said to the often repeated statement that the testimony afforded by the mouth is at best of only slight corroborative aid to diagnosis? Such a statement is truly absurd. The philosopher's stone was never more assiduously sought than are aids to medical diagnosis. If conditions of the mouth will serve to guide a practitioner properly even in a small number of cases, the knowledge of these should be as assiduously cultivated as are the physical signs of the chest and abdomen. In a very recent brochure on pyorrhea alveolaris Fitzgerald of London calls attention to the frequency with which diseases of the gum cause antral empyema, chronic gastritis, phlegmonous gastritis, systemic toxemia and other infectious diseases, whose early recognition and scientific treatment cannot be divorced from the absolute necessity of recognizing and appreciating the primary focus of disease about the gums. There are those who are in honest accord with us in all that has so far been said, but who believe that since there is no lack of good dental practitioners, the medical man can always refer his cases to his dental confrères and thus conscientiously avoid the disagreeable duty of himself mastering the principles of dentistry. Such a statement, however, is one of the strongest arguments in favor of our proposition. In the first place the medical practitioner of to-day is incapable of judging whether or not a particular man is an efficient dentist, and again he is oftentimes equally incapable of discovering early pathologic conditions due to oral disease, and requiring simple dental treatment in order to effect a cure. We do not deny the existence of innumerable dentists capable of aiding the general practitioner; but we do affirm the general practitioner's lack of proper appreciation of the scope of these dentists and their work in remedying systemic disease.

In conclusion, let it be noted that the mouth and teeth are as much an integral part of the human economy as are the eyes, ears, larynx or genito-urinary apparatus. The interdependence of systemic diseases and of diseases of the oral cavity is as close as that between the body and any other of its functionating organs; and therefore the general practitioner is in duty bound to acquaint himself with the appearances of the normal and abnormal oral cavity. The seemingly complete separation of stomatology from general practice in existence in this country to-day is a result of the failure of medical men of sixty years ago to appreciate the importance of dental prin-

ciples. What we are now striving for is the closure of this gap, and the only feasible way to accomplish it is to acquaint the medical undergraduate with the important bearing that a study of the mouth has on the application of the general principles of medicine. Our thesis is to emphasize the fact that in knowledge lies power, and that the resulting power is always commensurate with the comprehensiveness of the knowledge. That this knowledge need not be all-embracing we have tried to point out by distinctly limiting the term dental principles; but that it would be of unqualified value we have also tried to show by pointing out the advantages to be gained from acquiring such knowledge. There would result the necessary feeling of sympathy between the dentist and general practitioner; the general practitioner's work would be of a higher standard, the dentist's work would be more satisfactory, and lastly and most important, the patient would be better served. These results are truly to be hoped for. Although it is true that the medical profession contains men who by a self-imposed duty of study and observation after graduation have rendered themselves capable of recognizing and properly appreciating diseased conditions in the mouth, yet such men form a glittering minority. We firmly believe that the only way of increasing the number of this conscientious minority is by instructing the medical undergraduate in those principles of stomatology which will make of him a truly broad general practitioner.—*Jour. Am. Med. Assn. June, 1900.*

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HAS LEGISLATION CURED QUACKERY? By Dr. Norman W. Kingsley, New York. Read before New York Odontological Society, Feb. 20, 1900. The title of this paper suggests both a disease and a doctor, and in our treatment of the subject we must first diagnose the disease. What is quackery? The dictionaries define a quack as an ignorant and fraudulent pretender to medical skill; a knavish practitioner of medicine; an imposter; a cheat; and, I may add, any method in the practice of a profession which tends to degrade it in the estimation of the community is quackery. In its original use, the word undoubtedly meant noisy, loud-mouthed, blatant, and in its broader and more modern use it is applied to any assumption of knowledge or skill which one does not possess, whether in medicine, dentistry, law, theology, politics or religion.

If imposture, fraud and deceit constitute quackery, where stand the curists and the pathists? The alleged scientists, whether Christian or Jewish, Gentile or Mohammedan, the osteopath, the homeopath, the hydropath, and even the regular allopath who writes a prescription for an innocuous mixture and takes his fee therefor? His prescription hasn't even the merit of the shot made by the hunter who, when asked what he was aiming at, said it was something to kill if it was a deer, but to miss it if it was a calf. Quack has become synonymous with empiric, charlatan and mountebank.

The empiric is here in bad company. He is not a fraud and is not dishonorable *per se*. He is not necessaaily a mountebank selling nostrums from the tail of a cart with a hand-organ accompaniment. The empiric experiments and is guided by his experience. When a sufficient number of experiments are collated to establish a fact, and a sufficient aggregation of related facts to show a system, it becomes a science. The greatest empiric in electricity of our day is recognized as the most accomplished scientist. All that is scientific in dentistry has been built during the century now ending upon empiricism, but not always by charlatans nor quacks. Nevertheless, the most noted quack in dentistry of seventy years ago introduced a material which, in its varying modifications, has saved quite as many teeth from further decay as any other material. He was a prince among empirics. The quackery was not in the material used, but in the unskillful manner of its use, and in the blatant pretension with which it was heralded.

Harris, Townsend, Maynard, Westcott, Atkinson and Dwinelle were all empirics, but not quacks. Perhaps within our own time Atkinson was the greatest empiric of them all, but he was not a charlatan.

We have all of us been empirics (those of us who have any brains); it's only the conservative dolts who haven't been. The number of inventions, operations, remedies, etc., which I have seen exploited with a bombastic flourish only to be rejected after a short life, if materialized, would fill a museum. There they lie on the shelf like grinning skulls in the Catacombs.

In the first half of this century nearly all dentists were regarded as quacks by the medical fraternity. They were empirics, but not charlatans. There *were* quacks as there always are in any vocation. But relatively there was not nearly so much quackery as exists to-

day. Fifty years ago in this city there was very little quackery. The profession contained many honored names—gentlemen of culture and social standing. In the fashionable functions of that day were to be found the names of dentists distinguished alike for their skill and good breeding. The quacks were peripatetic, itinerating from one place to another, but even they were not guilty of the crimes in the name of dentistry that are so frequently found to-day. The profession as a whole did not accomplish so much good as it does now, and on the other hand the quacks did far less harm.

As I look over the field at the close of a half century's observation, I see three grades of dentistry. Dentistry as a profession, dentistry as a trade, and dentistry as a side-show to a circus. Each of these grades carries its own customs, which are a law unto itself. A profession, by habit of thought and common consent, is a dignified vocation with a pretence at ethics. A trade may be equally dignified, but its ethics are not so rigid as those of a profession. The side-shows of the circus are classed with the mountebanks, and while their acts may not make them amenable to criminal law, they are nevertheless regarded as cheats. There is nothing morally wrong in your putting up a tent outside the circus and with a brass band exhibiting a fat woman and a two-headed calf for a shilling to those who would give a shilling to see a fat woman and a two-headed calf. Such people pay their money and get what they pay for. There is morally no imposture, for the man with a shilling when once inside can judge for himself whether the woman be fat and the calf has two heads. The dental side-show chooses for its circus one of the greatest shows on earth (outside of Barnum's), a modern department store, where in the dental "parlors" are to be found the figurative fat woman and the two-headed calf. The blare of the brass trumpet is represented by the advertisements in the cheapest daily newspapers, and all the arts of the mountebank are used to entice the victim. "Will you walk into my parlor?" said the spider to the fly.

When the verdant rustic views the real fat woman and the real two-headed calf he knows that he has received what he has paid for, but when he gets within the confines of the dental side-show he is at a disadvantage, for he is not an expert on dental operations, and however so much he may get that which he paid for, the methods of the concern savor of the mountebank and the active participants

are rightly denominated quacks. They can have no standing among honorable men. Their influence upon the community cannot but be degrading to a dignified and honorable calling. Dentistry as a system of organized and legalized quackery reaches its fullest attainment in the "dental emporiums" of the avenues and streets in which ethics play no part, and the chief and only object is to make money by all the devices known to trade; the main factors being advertising and underselling your neighbor.

In trade we see the most alluring of advertisements in large type, filling columns and sometimes covering whole pages of the daily newspaper, setting forth in the most attractive manner the quality and cheapness of the goods offered. Such advertisements are the claptrap which the brass band furnished to the circus. They are the methods of the mountebank, but when the statements are within the limits of truth the methods are legitimate, because it is a trade and not a profession, the ethics of trade being limited to "honesty is the best policy." In trade we see an establishment backed by capital, with many employes and a superintendent over them, the real head being rarely visible. Rigid discipline is maintained, the employes being not much better than slaves.

When dentistry is carried on as a trade we find the same methods prevailing; an establishment with the effort to dignify it by calling it a dental emporium; a very swell darkey in uniform, with the air of a general, at the outside, to give importance; a superintendent and hired employes under constant surveillance like so many criminals; the same kind of advertisements even to the full page, and the same effort to undersell his neighbor. All professional ethics have been thrown to the winds, and even the ethics of trade, "honesty is the best policy," are not regarded. All the characteristics of the mountebank are there, and notwithstanding the employes may have the diploma of a "reputable dental college," and are duly registered, the establishment is one of quackery, and all the employes are tainted by the association.

When dentistry is practiced by gentlemen and regulated by the ethics of gentlemen, irrespective of a cast-iron code of ethics, it becomes an honorable profession. There are no claptrap brass band efforts to entice nor allure. There is no competition in fees. The chief ambition is to excel in skill, believing that in that road lies the surest way to a competence.

Legislation relating to dentistry had its origin in the middle and western part of the state. Whitney, Westcott and Rogers were the most active promotors. I do not think that the suppression of quackery formed any prominent part of the objects they wished to attain. *That* thought was an incidental one. The primary idea was the elevation of the profession in itself, and in the estimation of the community. Organization under an act of legislature would crystallize the profession and stimulate an ambition for better things. The existence of incompetency was recognized in the provision made for censors in each of the eight districts of the state, which boards were empowered to grant licenses (upon examination) to practice in their respective districts. I do not think that the founders before named had any very clear idea of how their plan would work in practice. The state board of censors during the first year could give only a license to practice, but subsequently they were empowered to recommend to the state society the conferring of a degree. This was quite a step in advance, for whereas at the first meeting of that board nearly every one who applied received his certificate, at the second meeting they realized the greater responsibility and the examinations became more searching, and during the sixteen years of my connection with that board it was not uncommon for fifty and sometimes seventy-five per cent of those who applied to be rejected.

The power to confer a degree was criticized by the dental colleges, who seemed to feel that it was encroaching upon their special prerogatives, but in its day it served an admirable purpose. The ambition to possess a degree stimulated many a man to prepare himself for an examination, which was commonly reported to be excessively severe. Certain it is that graduates from dental colleges could not always pass and were plucked equally with non-graduates. It used to occur to me sometimes, in my cynical moods, that one of the advantages growing out of the law was commonly overlooked. It gave such a splendid opportunity for a lot of us to pose for the time being as a little above the outlanders by being made officers of different grades, for if there is anything that the average man does love it is to be lifted into a place of alleged superiority to his fellows, and for this attainment he will log-roll for himself and resort to no end of tricks to beat his competitor. No matter how humble or inferior the club, society, association, stock company or political

party, they are all possessed of the same ambition and tarred with the same stick. Hence we see the first fruit of dental legislation was the creation of opportunities for officeholding; eight district societies, each with at least four executive officers and five censors; the state society with five or six more, and last, but by no means least, that particularly select and high-toned board of which I had the honor to be president for sixteen consecutive years. Just think of it! Eighty-six officers in all. There was a time almost within my own remembrance when there would not have been any chance for privates.

The first legislation aimed directly at regulating dentistry was the act of 1879, which allowed all the quacks, charlatans, and incompetents then in practice to continue by registering as provided, but would let no more in after a certain date without diplomas. It did not separate the sheep from the goats, and it made the goats by legislative act all sheep. It was a kind of trades-union that wouldn't let any more in without conditions.

After nine years' faithful effort to suppress incompetency, the law was found insufficient for that purpose, and the aid of the legislature was again called. I will not attempt to detail or describe the amendments on amendments that appeared perennially. Hardly a meeting of the state society has been held when the chairman of the law committee has not suggested the necessity for further amendments. I have reason for believing that the best legal talent has been employed in framing these statutes, and there has been no lack of zeal in enforcing them.

What has the law accomplished? It has certainly raised the standard of professional education. It is no longer possible in this state for the barber to call himself a dentist because he has a chair. It is no longer possible for the shoemaker to turn his awls into excavators and pluggers and tramp as a dentist; nor for the jeweler, because he is skilled in gold and silver work, to undertake dental prosthetics. The law exacts that he who would essay to practice dentistry must have, before entering upon its special studies, a preliminary education far in advance of any that would be required in the trades just mentioned; an education which at least lays the foundation for culture.

Has legislation cured quackery? There are certain diseases and vices which all the legislation in the world up to the present has

failed to abate. They continue to flourish in spite of all the sumptuary or prohibitory laws on the statute books. Intemperance is conceded to be a disease and a vice, and legislation has been invoked for generations to prevent it, but without avail. Quackery is a vice and figuratively a disease. It has not been stamped out by legislation. It is not even abated. It is on the increase, and most discouraging of all, the community does not look upon it as disreputable or unethical. The mortifying fact stares us in the face, that in the estimation of a large portion of the community these quacks are dentists just as much as we are. You and I may know that we are of a different order, and so do our personal friends, but to the people at large we are dentists and so are they.

To see one's vocation, which is in itself humanitarian in character, which within its sphere is second to none in the personal benefits it confers, whose methods call for the exercise of more than the average of intelligence and skill, to see such an honorable calling dragged through the mire of charlatanism makes every one with any *esprit de corps* blush with shame and mortification at the name of dentist. I have noted in some quarters an effort to correct such a feeling by a change of name, but say what you may and do what you choose, our mother tongue has fixed irrevocably your designation. One who treats teeth is a dentist, and as ninety per cent of your duties relate to the teeth you are dentists. Call yourselves stomatologists, odontologists or what not, you cannot escape the fact that you are dentists, and if there is any opprobrium attached to this designation, you had far better devote your energies to removing the stigma than to crawl from it and expect to improve yonr status by calling yourselves by another name. Odontological or stomatological is well enough for the name of a society to distinguish it from some other society, but its members are dentists all the same.

I do not know what the outcome will be. In this age of gold, iron, capital, industries, thrift and trusts, are we drifting away from the strictly professional idea? As a profession we hold an anomalous position. Much as we may cry professional because that term has been regarded as a little more high-toned than trade, much of our technique differs in no way from the methods of the industries. Industries employ hired labor and trusts combine industries. So much there is in the practice of dentistry that can

be done by hired labor; so much that is really mechanical labor instead of the intellectual, as in the law, theology, medicine, literature or the stage, that it may be the inevitable drift of the age that what we call quack establishments, because of their methods, may be the forerunner of the bulk of dental services rendered in the future, particularly in cities and densely populated districts. We already see that legislation does no good in the attempt to abolish them, and but little is gained by any effort to have the community regard them as disreputable.

A certain class in the community is always looking for bargains. The vast majority is reared in moderate circumstances, and must look closely after their finances. They get bargains by shopping. They get good goods by looking about. They can see no particular object in paying any more in one place than another for anything they may want, and from their standpoint an establishment which can for any reason supply their wants at a less cost will be patronized, *and particularly if you have guaranteed, as you have by legislative act, that the individuals employed are skilled men.* What argument can you make to the shopper against the quacks?

You and I who have established a clientele upon which we can fairly rely for our few remaining years may not worry over it, but I distinctly see a menace to the prosperity of the thousand young men annually entering the ranks of dentistry. The encouragement to the newly-fledged graduate to put out his sign and ethically await a caller is so very slender that the question of sustenance forces him into an "emporium," where the stipend to say the least is not mean. How you will meet this condition which confronts you I cannot forsee.

My half-century of activity entitles me to rest. It is upon you who are younger, more courageous, more enthusiastic, that the decision will devolve whether you will accomplish your most laudable object—the betterment of your vocation—by jumping upon the evils with prohibitory laws, or recognizing the inevitable endeavor to correct its abuses.—*Cosmos, June, 1900.*

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AFTER-RESULTS OF TREATMENT OF CARIES BY GERANIUM-FORMOL. By MM. C. Andre and G. de Marion. In presenting the results of treating caries of the 3d and 4th degree by Geranium-Formol, a method we introduced several years ago, we

have a double purpose. 1st, to show the success of the method when properly carried out; 2d, to reduce to their real value proceedings which it has been desired to connect with the formol method, and which show that their authors have a complete misunderstanding of the use of this substance for this purpose.

In order to determine the useful properties of formol, let us see what is the condition of a tooth affected with caries of the fourth degree. The pulp has been destroyed and liquified by putrid fermentation; in its place we find the products of its destruction, and among these a quantity of infectious germs. The condition is much the same as when animal matter is destroyed in contact with the air; the canals are filled with a brown substance of soft consistence, moisture, emulsionised fatty acids, sulphuretted and phosphorised ammoniacal derivatives, and these, especially the latter which are soluble in water, are disseminated in the dentinal tubes. When formol of sufficient strength is brought in contact with putrid products there results almost instantaneous deodorisation of these residues. This important property has been observed and noted by all those who have used formol in treating the dental canals, as well as by surgeons who have employed weaker solutions for washing infected wounds.

When equal volumes of formol and ammonia are mixed together much heat is evolved, and the alkalin odor disappears. The two bodies combine thus: 6 molecules of formol + 4 molecules of ammonia = 1 molecule of hexamethylenamin + 6 molecules of water. The reaction is rapidly effected and is complete at the end of a quarter of an hour. The ammonia is thus replaced by the hexamethylenamin, which is a white powder very soluble in water and in alcohol, non-volatile, neutral, and which is neither an irritant nor caustic.

If instead of existing free the ammonia be combined with an organic acid, such as acetic, malic, lactic or citric, the same reaction occurs, setting free the acid. For instance, with acetate of ammonia the action may be thus expressed: 6 mol. formol + 4 mol. ammonium acetate = 1 mol. acetate of hexamethylenamin + 3 mol. acetic acid + 6 mol. of water.

One of us has made use of this reaction in successfully administering spirit of mindererus as an antidote in a case of poisoning by formol.

If instead of ammonia we have to do with putrid bases, free or combined, the same thing happens; there is always a combination with the formol, a resulting neutralization of the ammonia base, and a distinct transformation into products more condensed, inodorous, non-volatile, and deprived of all irritating or caustic action.

It must be well noted that up to now the question has not been as to the microbicide action of formol; the only effect considered is a purely chemical one of changing volatile and fetid ammoniacal derivatives into more condensed, neutral, fixed and odorless products of a constitution analogous to hexamthylenamin, although having more complicated formulæ.

This is not all, for the products of disintegration of the pulp are not formed only of ammoniacal derivatives; there are fatty acids besides, arising from the splitting up of albuminous substances and which give that peculiar soft viscous consistence to the contents of the canals; lastly there are gaseous products, in small quantity certainly, principally formed of sulphuretted and carburetted hydrogen.

Practically speaking, these fatty acids seem to have no distinctive noxious influence, since they are non-volatile and their chemical energy is very feeble; but we think that by the viscous consistence which they render to the pulp residue they can, by obstructing the microscopic opening of the dentinal canals, oppose a barrier to the diffusion of formol and delay its action. What confirms us in this opinion is the much greater rapidity of the disinfecting action of formol since we employed it in an alcoholic solution the same strength as the aqueous ones.

The solution we have employed since October, 1897, under the name of formyl-geranium, has this composition: Formic aldehyd 40 parts; essence of geranium, redistilled, 20 parts: alcohol, 80 degrees, 40 parts. That is to say, our geranium formic liquid has a strength of formic aldehyd as great as that of the commercial formols, and contains a fifth of its weight of pure essence of geranium.

Now, alcohol and essence of geranium, which separately have a very marked solvent action upon fatty acids, cooperate in a very efficacious manner by their association in the general act of disinfection in disintegrating and dissolving the viscous stuff which lines the root walls and obstructs the openings of the dentinal canals. Besides, alcohol by its own diffusability in moist places helps the diffusion of formol in the fluids of the dentin.

There remain the gaseous products and principally sulphuretted hydrogen and formene upon which our liquid has no chemical action of absorption. But these products are in small quantities, for they are set free as fast as they are formed. Alcohol, however, and the essence of geranium, which in a general way feebly dissolve gaseous bodies, can facilitate their departure by mixing with the fluids of the tooth.

Now that we have seen how the principal constituents of our combination help to produce perfect disinfection of the root walls and the dentin, it remains to speak of their sterilizing action. When the destruction of the putrid products is obtained, and only at this moment, the antiseptic work begins. The formol, the diffusion of which is very rapid in the conditions of the spot where it is placed, and the essence of geranium itself, helped by the alcohol, penetrate into the canalicules and destroy all the pathogenic germs.

If one be well imbued with this idea that the antiseptic action of formol is subordinate and subsequent to its disinfectant action, that the one can happen only when the other is achieved; if, moreover, one recollects that the disinfecting effect of formol is (according to the reactions we have stated) proportionate to the quantity used, it becomes unnecessary to use any other argument to justify the use of a large dose of formol in dental dressings. We must then repudiate every formula in which a weak dose of formol appears under the vain, underestimated excuse of its great antiseptic power; we have given to our solution its minimum strength.

After weak solutions of formol there is another form under which it has been desired to use it in dental therapeutics. We refer to powders or pastes containing formol in a nascent state. (?) We have analyzed a preparation of this kind, and it contained oxid of zinc, burnt alum, anhydrous sulphate of lime, eugenol, and an infinitesimal quantity of trioxymethylen. According to the instructions which accompanied it this powder should be mixed into a paste with glycerin, and used as a unique application to make the most complete filling possible in a cavity under a permanent stopping. Experience has shown a short time afterwards the inadequacy of this mode of treatment.

We do not know if the owners of this powder attribute its virtues to formol, but we are sure that it does not intervene, because of its insignificant proportion and its immediate absorption by the putrid

products largely in excess. It must, however, be recognized that there was a relative success, and that for some time it caused an arrest in the progress of caries. The explanation of this fact seems simple when we remember the dehydrating qualities of sulphate of lime and burnt alum. It probably happens that these powders absorb by degrees the water contained in the dentin, and as putrid fermentation requires the presence of water, there was arrest of this fermentation and a relative cessation of the morbid phenomena. But there was only an arrest and not the destruction of germs nor disinfection, and when, by a mechanism that we do not inquire into, the dehydrating properties of the powders were satisfied and moisture reappeared in the dentin, fermentation recommenced and with it troublesome symptoms.

Nothing like this occurs with our method which we have by successive steps brought to perfection. It consists in making dressings at intervals of 24 hours until the last one taken out shows not the slightest trace of fetor, but preserves in absolute purity the smell of the geranium. For these dressings strands dipped in the formol-geranium are introduced into the canals and pulp-chamber; the whole being covered in by gutta-percha.

CONCLUSION.—Geranium-formol realizes as exactly as is possible the recognized theoretical conditions for the treatment of teeth with dead pulps. 1st. It is the most powerful disinfectant known. It destroys the products of pulp fermentation, combining with and neutralizing them. This effect is shown by the complete and definite deodorization of the cavity after two or three dressings. 2d. Its antiseptic power is superior to that of sublimate. 3d. It is extremely diffusible in moist places. By means of this valuable property it acts not only on the root walls up to the apex, but even in the dentinal canalicules as far as the periphery of the tooth. 4th. When geranium-formol is placed experimentally in sufficient quantity among putrid products it deodorizes them instantly. This experience shows that dressings may be made with as short intervals as may be desired, one hour if the need for rapidity occurs in practice; generally these dressings are applied on several consecutive days. 5th. Geranium-formol does not in any way injure the hard tissues of the tooth, and does not set up any troublesome condition (periostitis) in the membrane. 6th. Geranium-formol shows the advantage of a lasting result as compared with absorbent and dry-

ing powders. These act only by causing a more or less perfect dessication of the tooth, but this is only temporary, and when the powders become dydrated pulp fermentation recommences with the train of symptoms which it excites.

STATISTICS.—Since October, 1897, to December, 1899, we have treated with formol 350 cases of caries of the 4th degree in 242 patients. The cases of relapse occur in the proportion of 3 per cent, but it happens then in teeth the crowns of which were very much impaired by caries, and accidents which occur some time after treatment may be credited to invisible fissures or to imperfect stoppings. If we had not had formol at our disposal for these teeth we could not have attempted any other treatment.—*L'Odontologie.*

* * *

QUININE PLANTATIONS.—"The quinine plantations, or quinales as they are called, which have been started in Bolivia by the Germans, are usually found on rough and broken mountain sides, and at altitudes of three thousand or four thousand feet above the sea. The trees will grow at an altitude of eight thousand feet, but flourish best at an elevation of about four thousand feet, for they require a great deal of sun, rain and wind to reach perfection," writes William E. Curtis in the *Chicago Record.* "Most of the groves have been raised from the seed, which is gathered in the early summer months and planted in hot houses. When the plants are about six inches high they are transplanted upon the hillsides, which have been cleared of underbrush and plowed up beforehand so that the young roots can secure the benefit of all the moisture and plant food in the soil, and the heat of the sun. For shelter they are partially covered with twigs, straw or other light stuff, which also serves to keep the heat and moisture in the ground. After about two years this shelter is raked off; the plants are carefully inspected, and those which are not promising are replaced by new ones. The ground around them is kept clear of weeds and the young trees are carefully trimmed twice a year. In five or six years the tree will have reached a height of twelve or fourteen feet, and its trunk will be straight and slender, with a diameter of about six inches. It resembles the orange tree in size and shape and peculiar gloss of leaves. Two or three times a year three or four slips of bark about two inches wide are cut from the trunk and thrown upon a paved yard to dry. As the moisture evaporates they curl up like

cinnamon. Within a year or so nature replaces the bark that has been stripped off, and the tree is stripped again in other places. As it grows older smaller strips can be taken from the stronger branches, and a mature tree will produce an annual average of about four pounds of bark. The bark dries in a few days, and is packed for shipment in rawhide bales."

* * *

MECHANICAL ABRASION OF THE TEETH. By A. H. Thompson, D.D.S., Topeka, Kan. Read before Kansas State Dental Association, at Topeka, May 3, 1900. The term *abrasion* must be clearly understood as being distinct from *erosion*, although the two words are often employed interchangeably. The term erosion is properly applied to that form of wasting of the surfaces of the teeth which is due alone to chemical causes, and is characterized by molecular disintegration and solution of the lime-salts of the dental tissues; while abrasion is the term properly applied to the destructive wear of these tissues due to mechanical causes only. The two processes are quite unlike, although the results may sometimes be somewhat similar, as in wasting of the labial surfaces of the anterior teeth, where it is often difficult to distinguish one process from the other. By *mechanical abrasion*, or *abrasion* only, we therefore mean only the destructive wear and wasting of the tooth structures from mechanical causes.

Wasting from abrasion occurs in the first instance upon the labial and buccal surfaces of the teeth, and is due in this location to the mechanical friction of the tooth-brush when used too vigorously and persistently with a lateral motion to cleanse the teeth, with the addition often of too gritty grades of tooth-powder. This form of wear is familiar to dentists in persons who are in the habit of using the tooth-brush too vigorously across the exposed surfaces of the teeth. The wear is often quite destructive, and results frequently in the cutting of deep notches at the cervical borders of the enamel, where the necks of the teeth are exposed by recession of the gums—which is also due in a degree to the hard cross-brushing. The notch is often also cut directly into the enamel of the crown. The dentin therein is as smooth as if cut with a file and polished. Sometimes it is sensitive but not usually so. Erosion occasionally takes this form of wasting in this position, so that the two processes are difficult to distinguish. It is sometimes necessary to prepare and fill

these notches before the pulp is reached, although the latter organ usually recedes by dentinification as it is encroached upon.

As to the treatment of this form of abrasion—after filling, when necessary, the patient should be instructed to employ the *vertical* instead of the lateral motion in brushing, *i. e.*, from the gums toward the edges of the teeth, and to use a brush with cross-rows of bristles and a softer and less gritty tooth-powder.

Wear of the entire labial surfaces of the anterior teeth may result from this cause also, *i. e.*, hard cross-brushing. This type is quite like some forms of erosion. Even the bicuspids and molars may be worn or notched deeply by the wear of the brush, especially on the left side in right-handed persons. The direction of the brushing motion must be corrected in these cases also. The dentin is usually quite normal in color in these notches except a slight pigmentation in some persons, or in smokers when it becomes stained by deposits of carbon, or when attacked by caries. The worn surface is often quite hard and glassy until caries supervenes to aid the work of destruction. The dentin then becomes quite sensitive, and filling is indicated as being immediately necessary.

Abrasion of the occlusal surfaces of the teeth is quite common, and is due, of course, to the attrition of mastication. This form of wear is even sometimes called erosion, but the term is erroneous as applied to it, for chemical disintegration never takes place on these surfaces. The points of the tubercles of the molars and the cusps of the bicuspids and cuspids are first worn off, exposing the dentin, which wears out in little cups surrounded by a wall of enamel. The edges of the incisors are worn off so as to show a line of dentin between the labial and lingual plates of enamel which gradually widens to a groove. This is the *first degree* of wear or *primary abrasion*, as it is sometimes called. There is as yet no disturbance of the occlusion, for the cusps and edges are yet long enough to interlock and preserve the normal articulation. Abrasion at this stage is readily interfered with by cutting out and filling the little cup-like depressions, and thereby preventing further wear.

The *second degree* of wear or *secondary abrasion* is when the cusps and tubercles are worn off and the occlusal face is quite flat. There are extensive depressions where the dentin is exposed and elevated ridges of enamel run irregularly over the surface. The abraded dentin is likely to be quite sensitive at this stage and will

require cauterizing with acids or caustics or applications of zinc phosphate cement to allay the sensibility, before the depressions can be filled with gold, which is the proper treatment. The incisors are worn off one-fourth or one-third of their length, and the dentin is destroyed so as to leave a distinct groove across the entire width of the crown. The enamel-wall being left higher, it is readily fractured and presents a ragged and chipped appearance. This groove must of course be filled to prevent further wear and chipping. At this stage there is distinct disturbance of the occlusion. With the loss of the natural eminences of the occlusal surfaces of the grinding-teeth and the rim of the overlapping edges of the incisors, the interlocking of the articulation is lost and the jaw glides forward as the teeth are reduced in length. There is a perceptible "jumping of the bite." This is especially noticeable in tobacco-chewers. The treatment consists in the restoration of the masticating surfaces by proper filling and crowning. Effort should be made to correct the occlusion by raising the bite and thereby drawing the jaw backward to its normal position.

In the *third stage* or *tertiary occlusion* the entire occlusal face is worn off, the crown is irregularly reduced in height and presents the appearance of a wide concavity with ragged enamel edges around it. There is approach of the wasting to the pulp, with the result of its dentinification and recession, or exposure and death. The latter result frequently occurs when the wear proceeds too rapidly to permit the pulp to protect itself by dentinification. As the teeth approach this stage the wear of the different dental tissues resembles in a degree the irregular wear of the teeth of herbivorous animals where the varying densities of the enamel, dentin and cementum produce a constantly rough surface for the masticating of resisting vegetable fiber. The upper and lower teeth, when closely interlocked by the irregular wear, form a fine line of contact which also recalls the normal arrangement of the occlusion in the herbivora. The edges of the enamel in the extreme stages of wear are sharp and ragged, and are a constant menace to the tongue and cheeks, which are frequently cut by them and severely wounded. Constant irritation of the tongue from this cause may sometimes, in persons in whom there is a predisposition, cause it to become the seat of cancerous growths. On account of this danger in persons past middle life, this sharpness of worn teeth must be carefully

watched and corrected. The treatment for the extreme stages of occlusal abrasion is to raise the bite to the normal line by means of cap-crowns and bridges and contouring.

The incisors and cuspids may be worn down until the cervical third, the thick portion of the crown, is reached, and the edge looks wide and grooved. This appearance has led to the popular idea of old persons having "double teeth all around," of which we often hear. The loss of bicuspids and molars contributes to the excessive wear of the anterior teeth by throwing the extra work of mastication upon them. From irregular loss of teeth irregular wear of the remaining teeth often ensues, and produces some curious forms as the result of excessive attrition in a few localities.

The primary cause of abrasion of the teeth upon the occlusal surfaces is, of course, the performance of the proper function of these organs, the reduction of food and its mastication preparatory to digestion. In many lower animals this wear is normal and necessary, and nature provides for its utilization in many remarkable ways. In the herbivora, for instance, the three dental tissues are so arranged that their different densities cause unequal wear and preserve a constantly rough surface, which is necessary to triturate the fiber of vegetable food. For the purpose of causing normal wear of the molars of elephants in captivity it is said to be necessary to add sand to their food. Again, in the rodents the enamel is very thick upon the labial surface of the incisors and thin or absent behind, so that this portion wears away rapidly, and the harder enamel in front stands up to preserve constantly sharp edges. As these teeth are of continuous growth, excessive wear is necessary to compensate for this growth. Nature thus utilizes the attrition due to use to preserve the normal effectiveness of the teeth in many lower animals, and such teeth are of continuous growth. In man, however, where there is limited growth of the teeth, and therefore no compensation for wear, it is permanently destructive.

There is much difference in persons as to the extent and degree of abrasion of the teeth. In some the enamel performs its proper function as a perfect and permanent protection to the dentin, and endures for the lifetime of the individual. In others it wears away with more or less rapidity and exposes the softer tissue, the dentin beneath, which is soon destroyed by the attrition incident to the proper mastication of food. This destructive wear without compen-

sating growth is found in other animals also. This is noticed in old dogs, rats, cats, and other animals in which the teeth are so completely worn out as to become ineffective for the purposes of mastication. In a state of nature starvation undoubtedly ensues to old individuals from this cause. In man extraneous habits, such as tobacco-chewing, often contribute to destructive wear. This is one of the common causes of abrasion of the occlusal surfaces, the silica in the tobacco leaf acting as a most effective abrading agent. Not only this, but the constant and unusual employment of the teeth assists the wear. There is a peculiar end-to-end occlusion of the teeth in tobacco-chewers that is quite characteristic, for as the tubercles wear off the jaw moves forward, and by the squarer bite contributes to more rapid wear. Cases are known where cessation of wear has followed the discontinuance of the tobacco habit. It is a mistake to suppose that the amount of wear of the teeth bears any relation to the age of the individual, as has been occasionally advanced—as in horses—although the rule holds good that the teeth of old persons are much more worn than those of the young.

Among ancient and savage peoples the excessive wear of the teeth is almost universal and often quite remarkable. It is almost constant in adult skulls, as an examination of the specimens in museums will show. This is due to the hard, uncooked, or gritty nature of the food employed. The writer has recently examined nearly two thousand skulls in the museums of Philadelphia, and the destructive wear of the teeth in ancient savage races is almost universal. Only in young skulls could the cusp patterns be made out with any degree of certainty. The pulp usually recedes before the encroachment of abrasion, but frequently it is exposed, and its death and alveolar abscess ensue. This disease from this cause is quite common in ancient skulls where the teeth are much worn. Inexpert observers of ancient skulls are disposed to classify the much-abraded teeth as being different from the teeth of other and later races which are not so abraded. For instance, when the incisors and cuspids are worn down to the thick part of the crown near the neck and more or less notched, they are crudely described as being radically different from the teeth of Europeans, and as having "double teeth all around." Many old travelers thus describe the worn teeth of savage people, and even recently a newspaper archeologist writes of the teeth of the ancient Cliff-Dwellers of Colorado as

being different from those of later man in being "double teeth all around." Some of the early explorers in Egypt described the teeth of the ancient mummies as being "thick at the edge," and different from those of living races. In the collections above referred to the writer found no ancient skulls with "double teeth all around," but did find that destructive abrasion was almost universal, the anterior teeth being often worn to the base, and showing the round section of the tooth at that point which so often misleads inexpert observers and perpetuates the popular illusion. The mistake is pardonable in the laity, but is inexcusable in anthropologists who have a knowledge of human anatomy and are exact as to the anatomical variations of other parts of the human body.

The cause of this destructive wear is, of course, to be found in the nature of the food employed and the use of the teeth as tools besides, in ancient and savage peoples. For instance, in addition to the silica of the grain of Indian corn, the Indians grind the corn in stone mortars, like the metates of the Indians of the southwest, and sand from the stone naturally gets mixed with the meal, which of course causes much wear of the teeth. Or sand or earth gets mixed with the food at the open camp-fire, of which wild people are very careless. Or plants or nuts are eaten without the preliminary of washing the earth from them. Coarse vegetable food, more or less uncooked, with hard silicious stems causes much wear, as do raw meat, tendons, and even bones, which require much masticating effort. Cooking by means of hot stones thrown into water contributes its quota of grit to the preparation. These and other crude habits in a state of nature caused much abrasion of the teeth of our ancestors and all savage tribes.

The employment of the teeth as tools also causes much destructive wear and fracture. Savage man uses his teeth for seizing, pulling, tearing, cracking and crushing implements, and for many other purposes which civilized man performs with tools. The Eskimos chew their leather to make it soft, and as they are in the habit of thus softening their boots and other leather clothing every time it gets wet, the demand upon the teeth is excessive and results in destructive wear. In the fine Eskimo skulls the teeth are worn and fractured and the alveolar process is much thickened by this hard use. Other uses as tools to which the teeth are put by savages are very destructive, aside from mutilations for ornament.

With advance in civilization the substitution of tools for the use of teeth for many purposes, the cooking and softening of food and the exclusion of its most gritty elements, have gradually eliminated the agents that were most productive of abrasion of the teeth. Tobacco-chewing alone remains to civilized man as a lingering barbarism that is still an active cause of abrasion. A few individuals masticate the food so thoroughly as to produce wear from that cause, and some dentures seem to wear more rapidly than others, but the most wear is found in those who have lost some of the masticating teeth and the extra work of mastication is thus thrown upon the remainder. This can be readily corrected by our mechanical and artistic resources nowadays, so that restoration to normal effectiveness is quite a simple matter.—*Cosmos, June, 1900.*

* * *

VALUE OF A DENTIST'S TIME. C. Edmund Kells, Jr., D.D.S., New Orleans. The following are copies of actual letters:

Dr. C. E. Kells, Jr., City: March 3, 1900.

My Dear Doctor—I have received your bill for ($46) forty-six dollars, including item of ($6) six dollars for time lost by non-fulfillment of appointments, and in reply I enclose check for ($40) forty dollars, thus deducting the charge for time, as I think I have paid you too much in the past for my family to justify such charge. If this is not agreeable to you please let me know. I am, respectfully yours, J. W. BLANK.

Mr. J. W. Blank, City: March 4, 1900.

My Dear Sir—Your note of yesterday, enclosing check for ($40) forty dollars is at hand, and I return herewith a receipt in full. However, if you had considered the matter carefully, I do not think you would have questioned the charge referred to, for you well know that all my "stock in trade" for the day is my working time. If this is employed fully the day's work proves remunerative; if not employed, a net loss equal to the day's expense is the result.

As my time is fully required by my practice, each individual hour has a certain value, and to each hour must be charged its pro rata of the day's expenses, which are determined by dividing an average year's expenses by the total number of working days, Sundays and vacation being deducted from the year. Now, when a patient fails to keep an engagement and the time is not employed, the loss

incurred is as actual to me as the sale of a bill of goods to an irresponsible party who fails to pay would be to your firm.

A patient has the same right to ask for a charge for a service rendered to be remitted as for a charge for loss of time to be canceled, for in each case the time is the factor upon which the charge is based and the former would be no more of a deduction than would be the latter. Furthermore, upon making an appointment the patient receives a card bearing the date, etc., of the same, and upon the reverse of the card is printed: "Timely notice should be given if you cannot keep this engagement, and so avoid charge for loss of time." Consequently, when said patient accepts such card it is a tacit agreement that all such time lost will be paid for.

I do not wish to be unreasonable in this matter, and all I ask is for a reasonable notice that an engagement will not be filled, under which circumstances it is cheerfully cancelled. But when one "forgets" the appointment or is not "awakened" in time to keep a 9 a. m. engagement, why, these appear to me to be frivolous excuses for which I should not suffer.

Your statement relative to having paid too much in the past, etc., does not appear to me to bear upon the subject at all, as I honestly believe that for all fees received I have given full value in services, consequently there is no balance to your credit on that account. However, the amount at issue is so small that it is immaterial, and as before stated, inclose receipt in full.

I beg to be excused for taking up so much of your time with this explanation, but I have written at length to justify the charge, and hereby demonstrate the "Professional" side of the story.

Trusting you will accept the same in the spirit in which it was intended, I remain, very truly yours, C. EDMUND KELLS.

Dr. C. E. Kells, Jr., City: March 8, 1900.

My Dear Doctor—Your favor of the 4th inst. received. You will please find check for ($6) six dollars to pay your bill in full. It was no question with me of the six dollars, but I thought old clients like myself, who had paid you so much (I did not imply as you might have known, too much) money, would not come under this rule of yours which, of course, you have a right to make universal.

Your position is undoubtedly correct, and if my hour is not occupied by some one else, your loss is as actual as the loss of a sale

would be to me. I had no right to make the deduction, and am glad to rectify the error. Very respectfully yours,

J. W. BLANK.

—*Items of Interest.*

* * *

SURGICAL TREATMENT OF FACIAL NEURALGIA. M. Chipault, who has made a specialty of the surgery of the nervous system, read some most interesting observations before the Paris Academy of Medicine (*Lancet*, June 2, 1900). The surgical treatment of rebellious forms of neuralgia has hitherto given very unsatisfactory results. Peripheral resections of the trigeminal nerve are not dangerous, but give relief lasting only a few months. Resection of the Gasserian ganglion gives better results, but is a dangerous operation, for the mortality rate is not less than twenty-five per cent. On the other hand, the pathology of facial neuralgia, which so often arises as an accompaniment of a condition of arterial sclerosis, would lead one to imagine that it is a condition of vasomotor origin. Anyway, many of the symptoms which accompany it are of vasomotor origin, and go to prove that there exists some common cause, not of the neuralgia itself, but of something which sets the neuralgia in action. Given these conditions it is a logical mode of treatment to employ resection of the superior cervical ganglion of the sympathetic, a ganglion which furnishes vasomotor filaments, not only to the branches of the trigeminal, but also to the Gasserian ganglion and its central roots. M. Jaboulay had a successful case under this treatment.

After consultation with M. Abadie, M. Chipault decided to perform the operation upon a man, aged sixty years, who for thirty-eight years had suffered from a very persistent and acute form of neuralgia which increased in severity as time went on. The pain was especially marked in the region supplied by the superior maxillary nerve. After everything had been tried without success, more particularly opium and sulphate of quinin, the patient underwent the above mentioned operation. Within forty-eight hours afterward his pain had gone and he experienced nothing but a slight feeling of heat in the gum. This case bears out the correctness of the theory that facial neuralgia is due to some vasomotor cause.

M. Chipault remarked that this operation is neither dangerous nor disagreeable, a fact which he has demonstrated by having performed

it in some fifty cases. Moreover, the scar is in the neck and not in the face, and therefore hardly visible, and the patient is spared the subsequent annoying anesthesia, which is so trying a feature of operations upon the trigeminal nerve.

* * *

DOOLEY ON THE "ANTIS." "Do ye go down, thin, to Doctor Casey at the dhrug store an' git him to give ye a bottle av that mixture he gave me las' year. 'Tis not plisant to take, but it goes at a col' like an Irish lan'lord ayvictin' a tinant. Sthrong mid'cine f'r sthrong men. I was three weeks thryin' to stave off noomony iv th' lungs with th' shavins' of slate pincils that th' good doctor down be Halsted sthreet calls aunty pyreen, and aunty cammyoo, an' aunty this-an'-that-an'-the-other-thin', when with th' las' breath in me body I crawled to see Casey. He was a horse-shoer wanst, an' he mixes his med'cines in an anvil. He says, says he, 'I'll fix ye in a minyet,' he says; 'I've something here that cured Mullaney's horse,' he says, 'an' 'twill make ye r-right in no time if ye have the stren'th to take it.' I took wan dose iv it an' whin I come to I was cured. Anny disease that's pow'rful enough to get hold on Terrence needs to be treated like a fire in a furniture fachtry. Don't waste time on thim aunty med'cines. They was intinded to make sickness a perm'nent luxury. Git Casey's mixture f'r man an' baste, put him to bed, slap a musthard plasther on him that'll keep his mind employed, an' lave him to fight it out. May th' best man win. If Terrence's alive in th' mornin' he'll not have stren'th to cough. If he ain't do ye let me know."—*Ladies' Home Journal.*

ETIOLOGY OF ACUTE TONSILITIS.—According to Class, acute anginas may be thus classified according to their importance: 1. Those caused by the pneumococcus. 2. Those caused by the diphtheria bacillus. 3. Those caused by the streptococcus. 4. Those caused by the diplococcus scarlatinæ. 5. Those caused by the influenza bacillus. 6. Those caused by the staphylococcus pyogenes. 7. Mixed infections, two or more of the above germs being present in each case. These do not include absolutely all, as there may still be unidentified germs, and the anginas met with in measles and smallpox, which are probably due to specific contagion. Something like the pneumococcus zymogenes is sometimes found in throat cultures, which suggests a solution regarding the connection between anginas and the occasional subsequent endocarditis. Each of these forms is discussed separately, and the author urges giving more thought to the bacteriology of throat infections.—*Jour. A. M. A.*

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Editorial.

INTERNATIONAL TOOTH CROWN CO. IN NEW JERSEY.

Since our last issue the battlefield of the Dental Protective Association and Crown Co. has been transferred to New Jersey. Some months ago the Crown Co. brought suit against Wm. L. Fish and Jos. S. Vinson, both of Newark; and the trial of these cases was postponed until the fall sitting of court. The last day of June and first of July the Crown Co. brought suit against Geo. E. Adams of South Orange, Oscar Adelberg of Elizabeth, F. C. Barlow of Jersey City, E. H. Ginnelley of Trenton, W. E. Holt of Newark, A. S. Kniffin of Trenton, B. F. Luckey of Paterson, W. P. Richards of Orange and S. C. G. Watkins of Montclair. We were in New Jersey last week, and the Association's attorney is still there looking after these suits. The Crown Co. are trying in these cases, as they have in others, which was explained in last month's DIGEST, to compel the men sued to bring their books into court and have an examination of them before a master in chancery. Mr. Offield will fight this move, and we have no fear of the ultimate outcome, for it is against all justice to grant an examination of the books until the patent has been declared valid by a suit in court. Judge Lacombe of New York, who granted the right to the Crown Co. to examine the books of the member who was sued there, has given the Association the privilege of arguing against this motion, and our attorney is now in New York for that purpose.

It appears that after attempting in various and devious ways to stampede the Association, the Crown Co. is now ready to try cases in court. That organization has stated that the Association has delayed the trial of suits, but this is utterly false. We tried to force a trial of the cases in Massachusetts, but the Crown Co. had them postponed.

It is interesting to note what ingenious attempts the Crown Co.

make to stampede the Association, to make the members lose confidence in the organization, and to intimidate and bulldoze them into settling. These points have all been amplified previously, so we will not dwell on them. To show, however, the unmitigated gall and impudence of that nefarious corporation, we wish to relate what happened recently. H. A. Parr, a dentist in New York, who is a stockholder in the Crown Co., came to the recent meeting of the National Association at Old Point Comfort simply to prefer charges against the chairman of the Protective Association. He tried to get on the floor during the meeting to reply to our remarks, but this was not allowed, and he was told that it would be necessary to prefer his charges in writing to the Executive Council, which would pass upon them. He did this, and in the written charges accused us of "unprofessional conduct; of making false and misleading statements; of advising witnesses how to testify for the Crown Co.; of repeatedly talking with me (Parr) about the suit brought; of promising not to defend if a new suit was brought, as he (Dr. Crouse) was sorry for Dr. Low; of abandoning witnesses and members to their fate," and in short, of standing in with the Crown Co. As Parr had no proof to substantiate any of these charges, and as his position entitled him to no consideration, the council notified him that the charges could not be brought before the Association, as there seemed to be nothing to back them up.

An individual, and a dentist especially, who would hold stock in the Crown Co., a despicable organization which is trying to bleed his fellow dentists, is so low down a creature that he is unworthy the attention of any self-respecting member of the profession.

We owe an apology to our readers for having dignified this Parr with a notice, but as the agent of the Crown Co. we thought it best to show him up. The idea in this last move was simply to discredit the chairman of the Association in the eyes of his confreres and in this way diminish confidence in the organization which he served. To show its disapproval of any such procedure, the National Association passed the strongest kind of resolutions upholding the Protective Association and its management and criticizing those who seek to overthrow same.

We trust the readers of the DIGEST will pardon us for reiterating this caution, but from the letters of which we are daily in receipt it seems necessary. Members should not under any circumstances

make settlement with, render an accounting to, or treat in any way with the Crown Co., as the Association can take care of that corporation. Our earnest desire is to force the Crown Co. into court and there by process of law show the worthlessness and invalidity of its patent claims.

NATIONAL DENTAL ASSOCIATION.

The fourth annual meeting of this organization, recently held at Old Point Comfort, can not be considered a great success from a literary standpoint. The section reports were not up to the average and were far from being what they should be. The need of a more systematic plan of work, whereby a better program is presented at each meeting, is painfully apparent. If we expect to increase the membership and induce the young men of the profession to attend these yearly meetings, we must offer enough of value to repay them for the expenditure of time and money incident upon attendance.

The future prospect is more encouraging, for the various sections held separate meetings this year for the purpose of adopting plans of procedure which might result in better work. Never before at any meeting have the sections discussed or outlined any definite or concerted plan of action, but this year each section took the step in advance, and if the plans are carried out we may well expect a radical improvement in the literary work of the Association.

The attendance this year was up to the average. In fact, strange as it may seem, it was reported that there were two more actual members registered than at the big meeting last year at Niagara Falls. The membership, however, is not nearly so large as it should be. Since the consolidation of the American and Southern Associations into the National there has been a determined effort in some quarters to limit to state societies the delegates to the National, with the idea of fostering and strengthening the state organizations and compelling practitioners to join same in order to become members of the National. This was not, however, a broad view to take of the question, and this year the amendment to the by-laws was adopted, which gives representation to all regularly organized dental societies, and we think it is a most wise provision. This will increase the membership and secure the attendance of members of local societies, most of which organizations meet monthly, and a great many of same are composed of the best workers and most

talented men in the profession, of whose services the National has need.

This year was the first time the executive council was in operation, and all observers must have noticed the change and improvement in the sessions, for much time was saved and a deal of confusion avoided by having most of the miscellaneous business disposed of in the council. This same plan has worked well in state societies, and it will in the National if the council performs its duties wisely, as was exemplified this year.

We would suggest one other change in the plan of work which we think would be equally beneficial, and that is, to select a permanent presiding officer, who should be chosen simply and solely on account of his fitness for that important duty. Few men have this qualification, and the result is that many meetings do not accomplish much and the work is hindered because the presiding officer does not understand and can not carry out his duties. If this suggestion should be adopted one great essential to success will have been secured. The president can then be honored with the position without reference to his ability to preside over the meetings. As it is now, the honor is always the leading factor, and in most cases the one chosen fails in the most important quality, namely, not being able to conduct the meetings without allowing irrelevant matter to creep in and much time be wasted. It must not be thought that we are criticizing the presiding officer at the last meeting, Dr. B. Holly Smith, nor the one chosen to officiate at next year's session, Dr. G. V. Black, for they both are well fitted for the office. We make the above suggestion generally, as the National Association has not always been and will not always be so fortunate in its choice of presiding officers as it has been in the last three selected.

Notices.

WISCONSIN STATE DENTAL SOCIETY

At the annual meeting of this organization, July 17 19, 1900, the following officers were elected: Pres., E. A. Gatterdam; First V. P., E J. Hart; Second V. P., T. S. Reuter; Sec., W. H. Mueller; Treas., H A. Palmer.

RHODE ISLAND STATE DENTAL SOCIETY.

At the twenty-third annual meeting of the above body, July 11, 1900, the following officers were elected: Pres., G. H. Ames; V. P., R. L. Davis; Sec,

C A. Carr; Treas., H. W. Gillett; Librarian, D. F. Keefe; Ex. Com., J. A. Lynch, W. R. Howard, Jas. E. Power.

PENNSYLVANIA STATE DENTAL SOCIETY.

At the thirty-second annual meeting of this society, July 5–7, 1900, the following officers were elected: Pres., S. B. Luckie; First V. P., M. H. Cryer; Second V. P., G. L. S. Jameson; Rec. Sec., C. V. Kratzer; Cor. Sec., V. S. Jones; Treas., R. H. D. Swing. The next meeting will be held at Pittsburg the second Tuesday in July, 1901.

MAINE STATE DENTAL ASSOCIATION.

At the thirty-fifth annual meeting of this society, held at Brunswick, July 17 and 18, 1900, the following officers were elected: Pres , C. H. Haines; V. P., W. S. Payson; Sec., H. A. Kelley; Treas., E. J. Roberts; Librarian, E. Bacon; Ex. Com., E. C. Bryant, F. A. Burnham, D. W. Fellows, C. H Merritt, J. E. Harvey. The next annual meeting will be held at Old Orchard, July 16 and 17, 1901.

HARVARD DENTAL ALUMNI ASSOCIATION.

Alumni day for the fourth year was held by this organization in Boston, June 25, 1900. In the evening the twenty-ninth annual banquet was observed at Young's Hotel, covers being laid for one hundred and seven. The following officers were elected for the ensuing year: Pres , C. P. Wilson, '72; V. P., H. W. Gillett, '85; Sec , W. E. Boardman, '86; Treas., H. S. Parsons, '92; Ex. Com., W. E. Boardman, '86; W. P. Cooke, '81; P. W. Moriarty, '89.

W. E. BOARDMAN, Sec.

MISSOURI STATE DENTAL ASSOCIATION.

At the annual meeting of this body, held July 10–13, 1900, the following officers were elected: President, F. F. Fletcher; First V. P., W. M. Carter; Second V. P., F. H. Achelpohl; Cor. Sec., B. L. Thorpe; Rec. Sec., H. H. Sullivan; Treas. J. T. Fry. Committee on Ethics, A. M. Magee, J. F. Hull, G. H. Gibson. Censors, R. R. Vaughn, J. W. Hull, J. F. McWilliams. Publication Committee, Wm. Conrad, W. W. Birkhead. Ex. Com., F. M. Fulkerson, W. M. Carter, J. F. Hull. Com. on International Dental Congress to be held during St. Louis World's Fair, 1903, Wm. Conrad, B. L. Thorpe, H. J. McKellops, F. F. Fletcher, A. H. Fuller, W. M. Bartlett, W. F. Lawrenz. The next meeting will be held at Sedalia, July 9, 1901.

NATIONAL DENTAL ASSOCIATION.

At the fourth annual meeting of this association, held at Old Point Comfort, July 10-13, 1900, the following officers were elected for the ensuing year: Pres., G. V. Black, Chicago; V. P. for west, T. W. Brophy, Chicago, reelected; V. P. for south, M. F. Finley, Washington, D. C., reelected; V. P. for east, E. S. Gaylord, Hartford, Conn.; Rec. Sec., A. H. Peck, Chicago; Cor. Sec., Mary E. Gallup, Boston; Treas., Henry W. Morgan, Nashville; Ex. Council, H. J. Burkhart, Batavia, N. Y.; J. Y. Crawford, Nashville; Thos.

Fillebrown, Boston; W. E. Griswold, Denver; B. Holly Smith, Baltimore; Ex. Com., C. N. Johnson, Chicago; T. P. Hinman, Atlanta; V. H. Jackson, New York. The next meeting of the association will be held at Milwaukee the first Tuesday in August, 1901.

LATEST DENTAL PATENTS.

650,042. Dental chair, A. L. Gilmer, Alamosa, Cal.
650,350. Dental impression tray, L. A. Block, assignor one-half to R C. Graham, Chicago.
650,088. Dental instrument, A. D. Hoag, Philadelphia.
650,153. Dental tray, C. McLear, assignor to A. I. Watt and R. C. Graham, Chicago.
650,260. Dental trimmer, C. F. C. Mehlig, New York.
651,469. Dental motor, O. H. and A. F. Pieper, Rochester, N. Y.
651,753. Dental compound, B. C. Fowlkes, Mobile, Ala.
651,922. Dental instrument, W. E. Harper, Chicago.
652,197. Dental heater, W. F. Slack, Northwood, N. H.
652,404. Dental appliance, L. C. Sharp, Omaha, Neb.
652,719. Fan attachment for fountain spittoon, J. F. Mayer, assignor one-half to J. M. Cornyn, Philadelphia.
654,109. Dental articulator, H Backstrom, Montpelier, Idaho.

TRADE-MARK.

34,765 "Fellowship"—Dentists' supplies, Dental Protective Supply Co. of U. S, Chicago.

News Summary.

W. L. WINSLOW, 68 years old, died June 27, 1900, at Kansas City.

J. H. SCALES, a dentist at Black Rock, Ark., died suddenly July 7, 1900.

HURLEY DIRK, 23 years of age, a dentist at Unityville, Pa., died July 12, 1900.

WOMAN'S LAUGH.—Nothing makes a woman laugh so much as a new set of teeth.

GUY DENNIS, formerly a dentist at Henry, Ill., died in California recently from appendicitis.

H. MCCOLLUM, 92 years old, and for many years a dentist at Geneva, O., died June 28, 1900.

P. T. TURNER, a dentist at Stockton, Cal., was fatally injured by an electric car July 1, 1900.

J. R. BRISTOR, 66 years old, and for 40 years a dentist at Mansfield, O., died suddenly July 6, 1900.

L. E. SMITH, 35 years of age, formerly a dentist of Myerstown, Pa., committed suicide July 1, 1900.

N. C. WEINBERG, a dentist at Racine, Wis. 32 years old, died of heart disease on a train July 5, 1900.

J. WARD HOUSE, our cheerful friend at Grand Rapids, Mich., was married recently. Congratulations are in order.

LOUISVILLE COLLEGE OF DENTISTRY held its fourteenth annual commencement June 27, 1900, and graduated forty-five students.

ONE DAY OF SICKNESS will do more to convince a young man that his mother is his best friend than seventeen volumes of proverbs.

COCAIN POISONING.—Recumbent position; amyl nitrite inhalations; aromatic spirits of ammonia in water, to be slowly sipped.—*Med. Brief.*

GREENLAW CHRISTY, 50 years old, and for some time a dentist at Orange, Tex., committed suicide June 28, 1900, owing to poor health and poverty.

ELKHART (IND.) DENTISTS' BUSINESS ASSOCIATION.—This organization has been formed for mutual information and protection against chronic deadbea s.

YOUNG LADY'S DIARY.—On transatlantic steamer: Evening—"Took three pills before retiring." Morning—"Passed an iceberg at 7 a. m."—*Practical Medicine.*

LOUISIANA DENTAL BILL.—The new bill gives the State Board of Examiners increased power, and does not exempt men with diplomas from the board's supervision.

CONSTITUTIONAL, SUBMUCOUS, SUPPURATIVE ADENITIS.—A foreign journal reports a case of a man who developed this condition in a chronic state from carious teeth.

E. H. NEALL, a dentist for 30 years, died at Philadelphia July 8, 1900. He was a son of the late Dr. Elijah Neall, one of the first dentists who practiced in Philadelphia.

WATERPROOF GUM FOR PAPER.—Paper treated with a solution of formalin, to which an ammoniacal solution of casein is added, is rendered waterproof.—*Pharm. Post.*

WHAT'S IN A NAME —A Berlin physician recently published an article in the *Therap. Monats.* extolling the virtues of the "Backhaus-Milch" for infants.—*Med. Record.*

NERVE BROACHES BROKEN off in a root-canal can be easily removed after a dressing of 25 per cent pyrozone, applied on cotton, has been left in the canal for a few days.—*S. L. Walton, Items.*

GEO. H. MARKER, 50 years of age, formerly a well-known dentist of Hayfield, Va, died under suspicious circumstances at San Francisco, July 12, 1900, and it is thought he committed suicide.

POWDERS FOR TRIGEMINAL NEURALGIA.—The *Riforma medica* for January 10 gives the following formula: ℞ Extract of cannabis indica, 7½ grains; salicylic acid, 75 grains. M. Divide into ten powders. One to be taken three times a day.

CAPE NOME NOT PROSPEROUS FOR DENTISTS.—A dentist at Cape Nome writes to his brother at Los Angeles, Cal., stating that he is about to come home, as dentists cannot make a living up there.

DENTAL WEDDING PRESENT.—An advertising dentist at Macon, Ga., offers a present to the young couple who are married during the Street Fair. The bride shall be given a full set of false teeth and the groom a gold crown.

PET NAMES.—"The most graceful of domestic animals is the cat, while the most awkward bird is the duck," says an observer of nature; but it won't do to use these facts for a basis if you want to call a woman pet names.

TEETHING GERM.—Doctor of Old School: The child appears to be teething. Doctor of New School: Impossible! The bacteriological diagnosis discloses no trace whatever of the characteristic teething bacillus.—*Detroit Journal.*

BLEEDING OF THE GUMS AFTER EXTRACTION.—In five severe cases J. Munk (*Aerzt. Central-Anz.*) has seen almost immediate cessation of the hemorrhage follow the placing of a stypticin tablet upon the previously cleansed gum.

DOG'S PRESENCE EXPLAINED.—"Why does the dentist who does painless extraction keep such an ugly dog?" "Oh, that is because his patients often get frightened and the dog has to watch that they do not escape from the waiting-room."

FINANCIAL GENIUS.—Tommy: "Mamma has promised me 25 cents if I will have this tooth pulled. I am going to do it and buy candy with the money. That will spoil the other teeth, and I will get more quarters."—*Sondags Nisse.*

BUFFALO (N. Y.) DENTAL ASSOCIATION held its thirty-sixth annual meeting June 30, 1900, and elected the following officers: Pres., G. B. Scott; V. P., R. Murray; Rec. Sec., B. W. Whipple; Cor. Sec., L. F. Frank; Treas., S. Eschelman.

IRITIS FROM DENTAL IRRITATION.—Milliken reports a case of iritis apparently directly connected with decayed teeth, and relieved by their treatment. He thinks there is no question as to the casual relation of the dental disorder to the iritis.—*Jour. A. M. A.*

"UNIVERSITY OF DELAWARE."—According to the *Philadelphia Record*, a saloonkeeper, a dentist, and the wife of a carpenter, have organized the "University of Delaware" at Wilmington, and are prepared to issue any sort of degree, providing the stipend is large enough.

RATIOCINATION.—"No, he's no better," said a woman, when the doctor came to visit her husband. "You told me to give him as much of the powder as would lay on a ten-cent piece. I hadn't a ten, but I gave as much as would go on ten ones, and he's worse, if anything."

EVANS' MUSEUM WILL BE ESTABLISHED.—It is reported that the legal obstacles have been removed and that an amicable settlement has been reached between the city of Philadelphia and the executors and heirs of the late Thos. W. Evans, so that the museum will be a reality.

SOLDER FOR ALUMINUM has been patented by an Illinois man, the components of the material being an alloy of tin, bismuth and zinc, the tin being considerably in excess of the other ingredients in the solder.—*Patent Record.*

INDIA-RUBBER can be devulcanized by a new Danish process, consisting in reducing the rubber to pieces of suitable size, and then subjecting them to a solution of sulphite under heat, the solution being washed out after it has softened the rubber.—*Patent Record.*

CHANGE IN DOCTORS.—Doctor—"Why, my man, you are going to get well. When I was your age I was just as low as you are now with this same trouble and pulled through."

Patient—"Yes, but you didn't have the same doctor."

TO REMOVE OFFENSIVE SMELL OF IODOFORM following its use in a surgical operation, wash the hands in soap and water, rinse with dilute aqua ammonia, after which use the juice of a lemon or a little cider vinegar, and it will completely destroy the offensive odor.—*Eclectic Med. Jour.*

ANEMIA AND CARIOUS TEETH.—Hunter in the *Lancet* recently described a number of cases of pernicious anemia in which carious teeth were found, and he attributed the blood disorder to the swallowing of septic material from the mouth and its subsequent absorption in the stomach.

"My muzzer says I'se tut a tooth,
But somehow I tan't see
Why muzzer doesn't tell ze truth,
An' say ze tooth tut me." —*Chicago News.*

TENDER FEET.—Harden the epidermis and destroy bacteria with salicylic solutions five per cent, remove offensive odors with formic-aldehyd solutions two per cent, or apply tannoform powder (formaldehyd added to an aqueous solution of tannin and precipitated with hydrochloric acid.)—*Med. Record.*

IMPORTANT DENTAL TESTIMONY.—A millionaire brewer jumped over Niagara Falls in September, 1898, and a reward was offered for the recovery of his body. A skull has been put forward as genuine, but his dentist in Philadelphia states that from the condition of the teeth it could not be that of the deceased.

ILLEGAL PRACTICE PUNISHED.—A man in Maryland was fined $133.56 recently for practicing without a certificate. A man in Washington was convicted on the same charge, but applied for a new trial. One in Illinois was fined $50 and costs. Another in Ohio $25 and costs. Let the good work go on.

NEEDS WATCHING.—Tompkins: "That's a handsome umbrella you've got there, Gibbs."

"Yes, Tompkins."

"About what does it cost to carry an umbrella like that?"

"Eternal vigilance."

RAISING THE HAT AN ANCIENT SALUTATION.—When a knight of old entered a company of ladies he removed his helmet to indicate that he considered

himself among friends, and that there was no need to protect himself. This practice has survived in the custom of raising the hat when saluting a lady. —*June Ladies' Home Journal.*

"NATIONAL ASSOCIATION OF LIBERAL PHYSICIANS, SURGEONS AND DENTISTS"—This organization met at a Chicago hotel June 27. Inasmuch as the speakers were J. M. McDonald, J. H. Randall and T A. Gland, we are naturally somewhat suspicious of the organization, for J. H. Randall was formerly vice-president of the defunct and disreputable Independent Medical College.

TOOTHACHE.— —— Bros. put up a genuine Nerve-killer, in unlabeled, bottles, to be sold by chemists as own preparation; price 3s. per doz., net, with monthly account. Samples free. One chemist only supplied in each locality if desired. N. B.—This preparation is now also put up labelled and carded. A very reliable line. Same price.—*Advertisement in English journal.*

UNION LABEL ON COFFINS, or no burial in Chicago cemeteries, is part of the latest labor program. This, says a St. Louis contemporary, is an extension of power that stops only at the grave because it can get no further. This is a mercy for the unregenerate non-unionist, who otherwise would have to pay the penalty of being a free man in one world by being a vagabond in the next.—*Med. Age.*

HANDSHAKING A RELIC OF KNIGHTHOOD DAYS.—In the days of knighthood every man carried a sword and was ready to slash his neighbor upon the slightest pretext. When friends met they grasped one another by the right hand, thereby indicating peaceable intentions, as each one thus gave up to the other his fighting arm. This is why we shake with the right hand.—*June Ladies' Home Journal.*

FISTULA OF THE PHARNYX.—Freudenthal reports a case of fistula of the pharynx connected with disease of the ethmoidal and frontal sinuses, which was completely relieved by attention to these parts. He thinks the infection took place through the pus burrowing down from the ethmoid through the sinus maxillaris, and from there through a fistulous tract to the pharynx. —*Interstate Med. Jour.*

PORK DANGEROUS—The necessity of exercising great caution in the use of pork as food is again brought home very forcibly to us in the last report of the microscopist of the Department of Agriculture. In the microscopical inspection for trichinæ, 1,881,309 specimens were examined, and of these 13,325 were found to be infected. The expense connected with this examination cost the government $11,669.—*Med. Age.*

SUPPURATING DISEASES OF TEMPORAL BONE.—Burnett reports a number of cases of mastoiditis, Bezold's abscess, general necrosis of the temporal bone, etc., in whites and negroes. Some years ago he reported on the rarity of dry catarrh and suppuration among the negroes, though the latter is frequent among the children; they are almost without exception badly nourished and scrofulous, though not always tuberculous.—*Jour. A. M. A.*

NOT WHAT HE MEANT TO SAY.—Jones had a debtor who promised, but did not perform, so sent him this letter: "Dear Mr. Smith: Who was it promised to pay up on the first of January? You, my dear sir, you are the man. Who was it promised to settle on the first of March? You, my dear sir. Who was it that did not settle on the first of March? You, my dear sir. Who, then, is an unmitigated scoundrel? Yours truly, *John Jones.*"

SOUTHERN DENTAL SOCIETY OF NEW JERSEY.—The dentists in the seven lower counties of New Jersey have organized a society with the above title. The organization has now twenty-three members, and the meetings will be held monthly. The officers are: Pres., J. E. Duffield; V. P , O. E. Peck; Rec. Sec., A. K. Wood; Cor. Sec.; W. W. Crape; Treas , M. A. Morrison; Ex. Com., A. Irwin, C. H. Tuttle, E. E. Bower, A. B Dewees, J. G Halsey, J. F. Summis.

DEATHS FROM EXTRACTION.—A fourteen-year-old boy at Marion, Ind., had a tooth extracted June 25, and felt all right except for a numbness of the jaw. He died, however, at one o'clock the next morning. A young man at Manitowoc, Wis., had several teeth pulled July 9, and died in terrible agony from lockjaw. Another young man at Osceola, Ind., had a tooth extracted July 5, a local anesthetic being used. Blood poisoning set in and he died in agony four days later.

PERIPHERAL RESECTION OF FIFTH NERVE.—By Dr. W. W. Keen and Dr. William G. Spiller.—In spite of the transitory relief from these peripheral operations, their lower mortality would seem to give them the preference as against the Gasserian operations. Recourse to operative procedure should be had before the ganglion becomes involved. Very early operations (*e. g.*, after a month or two of ineffectual medication) may even cure permanently. The extraction of all the teeth seems to be an utterly needless sacrifice and productive of no good result.—*Jour. A. M. A.*

OCCASIONAL ADVANTAGE OF LONG HAIR.—If we may judge from a story recently printed in the Anaconda *Standard* there may be a decided advantage on occasions in having long hair. It is that of a drunken Cree Indian who crept in behind a switchboard of an immense electric power house to sleep off the fumes of his fire-water, and for the time being shut off the electrical supply of the city of Butte He was speedily rescued and found to be uninjured. His escape was attributed to the fact that his long hair, worn in a braid, had been drenched by the rain, and, coming alone in contact with the electrical current, had short circuited it.—*N. Y. Med. Jour.*

COVERING FOR THE FEET.—Zeutch (*Therap. Monat.*) All concede that our present methods of dressing the feet are unhygienic, and Zuetch proposes a remedy which will absorb the moisture of the foot and ventilate the shoe at the same time. This desirable result is accomplished by wearing an inner sole of two layers of blotting paper, and underneath them a layer of curled horsehair. The blotting paper absorbs the moisture from the foot and the upper layer will always be found dry; the pressure of the foot on the horsehair crushes it flat, but is resumes its former curl as soon as the foot is lifted, thus creating a vacuum which aspirates air to fill it.—*Jour. A. M. A.*

ADJUSTING RUBBER DISC ON FOOT BLOWER.—The rubber disc on my foot blower having bursted, I set about putting on a new one, but gave it up in disgust after two hours' work. Then an idea came to me which may help some one else out of the same fix. I soldered together the ends of a strip of tin about three-quarters of an inch wide, and long enough to go around the block of the blower rather loosely. I then laid the rubber disc flat over the blower, and pressed the tin hoop over the rubber and blower one-eighth of an inch; then wired it into place, took off hoop and wired net; all complete in five or ten minutes.—*J. T. Wheelock, in Brief.*

PSYCHICAL ELEMENT IN DISEASE.—The *Columbus Medical Journal* quotes the following translation of an Arabic legend by R. R. Bowker from the *Century:*

The Spirit of the Plague entered the gate.
One, watching, asked, "How many wilt thou slay?"
"A thousand," spake the Spirit, "is my quest."
The Plague made end. The Spirit left the gate.
The watcher cried, "Ten thousand didst thou slay!"
"Nay, one," the Spirit said, "fear killed the rest."

EASY AND EFFECTIVE METHOD OF MAKING A TINFOIL DISK FOR PULP CAPPING.—By Dr. E. B. Lodge, Cleveland. By means of a rubber-dam punch and a piece of No. 60 tinfoil you can punch out a disk that is admirable for capping slight exposures. When a small disk is used it may do well, whatever the condition is, in placing it just where you would like to have it. What I claim for this is the advantage in the manner of taking them up with a carrier. It punches out a small cone, and by taking hold of the cone at the apex you can insert the chloro-percha, and it is in the form of a tiny cup and you can place it just where you want it without any shifting of the capping.—*Ohio Jour.*

ANESTHESIA OF THE SKIN BY THE USE OF AN ELECTRIC CURRENT.—Gonka (*Centralb. fur Chirur.*, 1900) has endeavored to anesthetize the unbroken skin by the use of cocain solution and the galvanic current. A wad of cotton was saturated in a four per cent solution of cocain, placed upon the surface which it was desired to affect, and over this was placed the positive electrode of the battery, the negative electrode being applied to any other portion. The amount of anesthesia accomplished depends upon the strength of cocain used and the amount of current. A current of ten milliamperes continued for ten minutes enabled the operator to drive a needle through the skin without causing any pain; nor could the burning of a hot glass rod be perceived. Anesthesia did not last longer than five minutes.—*Ther. Gaz.*

HEALTH HINTS.—Don't work your ears; it may cause action in the brain cells.—Don't allow your necktie to mount above your collar; it creates insanity in people you meet.—Always wash your feet in water; molasses attracts flies.—Don't work in winter; it brings on pneumonia. and in summer it debilitates by increasing the perspiration.—Always breathe either through your mouth or nose; deafness may result from breathing through your ears.—Eat fruit and vegetables in the summer; they are too expensive in the win-

ter.—Cats carry diphtheria; don't contract diphtheria if you keep a cat.—Always disinfect your moustache before kissing your—wife. At the left-hand side of the bar you will find coffee and cloves for this purpose.—Don't spit on the floor; with a little practice you can hit the rug.—Avoid all drafts; learn the step of the bank cashier and jump into a closet.—*Gillard's Med. Jour.*

RESECTION OF THE SUPERIOR MAXILLARY NERVE.—M. R. Belin (*Le Progres Med.*) reports a successful resection of this nerve according to Poirier's plan, which depends upon the following anatomical points: 1. Normally the upper border of the pterygo-maxillary cleft is from four to six millimeters above the horizontal which cuts the superior surface of the junction of the zygomatic and malar bones. 2. The external wing of the pterygoid process and the pterygo-maxillary cleft are on a mean of four centimeters from the zygomatic arch. 3. The pterygo-maxillary cleft is always upon a line drawn perpendicular to the zygomatic axis passing through the temporo-maxillary articulation—that is, about one centimeter behind the angle formed by the zygomatic axis and the external orbital process of the malar bone. By following these measurements carefully the nerve can be attacked in the pterygo-maxillary fossa.—*N. Y. Med. Jour.*

MOLAR IMPLANTED IN THE ORBITAL WALL OF THE LEFT MAXILLARY SINUS.—M. Liaris (*Rev. Hebdo. de Laryngol*) presented a patient with an interesting condition of ectopic dentition. It was a case in which a molar was lodged in the left maxillary sinus. When the patient was first seen he presented an asymmetry of the face analogous to that accompanying ulcerating teeth. Palpation disclosed a tumefaction in the superior part of the upper maxillary sensitive to pressure. In the mouth one perceived a reddened, bulging, irregular mass which bled slightly. The orbital wall of the sinus was slightly elevated and roughened. Transillumination of the sinus disclosed a cloudiness, and lavage after puncture removed a slight amount of pus. The first impression was that a neoplasm had developed in the maxillary bone or within the cavity. After a few days, during which detergent injections and applications were made, the sinus was opened, and a well-formed molar was found in the posterior part, located on the wall of the sinus, embedded in the orbital face.—*Med. Age.*

DENTIGEROUS CYSTS OF THE SUPERIOR MAXILLA AND THEIR RELATIONS WITH THE MAXILLARY SINUS.—P. Jacques and G. Michel make the following classification: (1) Cysts of external origin, which develop about the roots of the incisors, cuspids, and sometimes the premolars. These have a great tendency to develop toward the cuspid fossa, separating the two tables of the maxilla. As a rule, it is the external table which yields, as it is the thinner; thus the anterior wall of the antrum is bulged outward. Finally it gives to the finger the characteristic crackling feel. (2) Cysts of sinus origin. As a rule these simply pouch inward the wall of the sinus without actually breaking through, so that there is no communication between the cavity of the cyst and that of the antrum. Sometimes, however, such a communication does actually exist. In the former of the two conditions extraction

of the tooth involved will provide proper drainage, but in the latter it is necessary to perform the classical operation for opening and draining the antrum.—*Rev. Hebd. de Laryng. Med. Rec.*

ALVEOLAR CATARRH IN CHILDREN.—(Gittings and Judson, *Pediatrics*, Jan. 15, 1900.) Alveolar catarrh begins as a proliferation of the alveolar epithelium. If this is slight the products are expectorated, but if severe the alveolar are blocked, the walls are permanently damaged and cheesy degeneration may result. The fibrous layer is sometimes involved, resulting in hyperplasia and ultimately in fibrosis of the affected area. Five cases are reported and the authors call attention to the following points: All were subacute, running a course of from six to eight weeks. The apices presented signs of alveolar catarrh long after the acute process in other parts of the lung had disappeared, and slight fever, anorexia and other constitutional symptoms persisted. The condition differed from tubercular infection in the absence of night-sweats, hemoptysis and marked wasting, and in their early recovery without hygienic or climatic treatment. Bacilli are constantly present in the lungs, and pneumonic processes may be set up by irritation of the alveoli. The authors think that the symptoms in their cases differed sufficiently from bronchitis and broncho-pneumonia to justify their classification under a separate heading. Although examination of sputum was not made they think that the tubercle bacillus is not a necessary factor.

DECISION OF INTEREST TO DOCTORS.—A decision of unusual interest to the medical profession has lately been handed down by the United States Supreme Court. In 1878 Dr. Benjamin W. Hawker, a legally qualified practitioner of the state of New York, was convicted of a felony, viz., performing a criminal abortion, and was sentenced to imprisonment for ten years. At the expiration of his time of servitude he attempted to resume practice, with the result that the Medical Society of the County of New York brought suit against him for violation of a state law. His counsel argued that a construction of the law making it illegal to practice medicine after conviction of a felony is unjust and unconstitutional, inasmuch as it in effect adds a new punishment for the crime. The people contended, however, that the state has a right to exact good moral character as one of the qualifications for the practice of medicine. The first trial resulted in a verdict of guilty and the imposition of a fine. The case was appealed and the judges of the Appellate Court decided to set aside the conviction, one judge (Ingraham) delivering a vigorous dissenting opinion. On a final appeal to the United States Supreme Court nine judges confirmed the conviction and sustained the constitutionality of the law, citing many decisions in support of their position. This decision will therefore stand as law for all future time, and will debar any man or woman convicted of a felony from practicing medicine.—*Am. Jour. Surg. and Gyn.*

FAKE WRITE-UP.—At a recent meeting of the Chicago Trade Press Association, an organization whose membership comprises the most influential journals in the west, it was determined to take some action to protect manufacturing and mercantile firms from the depredation of the "fake write-up

men." A number of alleged trade journals, several of them being printed in the Southern States, send out thousands of circular letters to merchants and manufacturers, inclosing proofs of ingeniously prepared write-ups Each person to whom a letter is directed is led to believe that he has been selected because of the prominence of his firm. The men whom it is sought to victimize are informed that no charge will be made for the printing of this complimentary notice, but that sample copies will be sold at 15 cents per copy, or at 8 cents per copy in thousand lots. These journals have no legitimate standing in the community, and represent nothing except the desire of their managers to extort money from business men. The circular letters are so shrewdly worded and the office of publication is usually so far removed from the persons to whom the letters are sent, that many firms have been victimized. Almost every department of industry is represented by one or more reputable journals, and manufacturers and business men generally are advised to communicate with publishers of whom they have some knowledge before being led into fake schemes. The several papers comprising the membership of the Chicago Trade Press Association, of which the DIGEST is one, have agreed to print this statement with a view of protecting their patrons and business men generally from loss through such deception.

AN EPITAPH.

A worthy dentist rests beneath
  This high-heaped, grassy mound;
True man was he, although his teeth
  Full often false were found.

All obstacles he did despise
  And often would he brag
He rather liked, than otherwise,
  To run against a snag.

Much suffering did he assuage,
  His patients lost each pang,
Though erst the throbbing tooth might rage,
  As they his doorbell rang.

His speech was frequent and most free,
  Right seldom would he pause,
Although a master hand was he
  At holding others' jaws.

He owned no family or clan,
  But gave all satisfaction,
For all agreed that he was a man
  Of excellent extraction.

He died without a sob or groan,
  He lived in decent gravity,
And now, beneath this mossy stone,
  He's filling his last cavity.—*Chicago Record.*

PASTE THAT WILL ADHERE TO ANYTHING.—Prof. Alex. Winchell, the eminent geologist, is credited with the invention of a cement that will stick to anything. Take two ounces of clear gum arabic, one and one-half ounces of fine starch, and one-half ounce of white sugar. Pulverize the gum arabic, dissolve it in as much water as the laundress would use for the quantity of starch indicated. Dissolve the starch and sugar in the gum solution. Then cook the mixture in a vessel suspended in boiling water until the starch becomes clear. The cement should be as thick as tar and kept so. It can be kept from spoiling by dropping in a lump of gum camphor, or a little oil of cloves or sassafras. This cement is very strong indeed, and will stick perfectly to glazed surfaces, and is good to repair broken rocks, minerals or fossils. The addition of a small amount of sulphate of aluminum will increase the effectiveness of the paste, besides helping to prevent decomposition.—*Jour. of Med. and Sc.*

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